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New Preparations;

A QUARTERLY JOURNAL OF MEDICINE

DEVOTED TO THE INTRODUCTION OF

NEW THERAPEUTICAL AGENTS

"Remedium non condemnatum est, donec id expertum sit."

EDITED BY

GEO. S. DAVIS,

AND

C. HENRI LEONARD, M. A., M. D.

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Physicians are cordially requested to send us reports of cases under their charge, in which they have employed any of the new remedies referred to in the pages of this journal.

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FIG. 73 (SAMPLE CUT.)

Figure of 8 of the Foot and Ankle.

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Ergot—Our preparations of this valuable agent have earned the unqualified approval of our medical friends. We take great pains to procure during the proper season a supply of fresh selected grain, which is manufactured into the following preparations.
Fluid Extract Ergot—Representing in each fluid ounce one troy ounce of the drug. A uniform and reliable article for internal use.
Ergotine—Prepared by the process of Bonjean, containing in a very concentrated form all the active constituents of the drug. Used in the form of pills. Dose from three to ten grains.
Ergotina Purificatum—Prepared especially for subcutaneous injection in aqueous solution. Where this article is desired, care should be taken to prescribe "Ergotina Purificatum—P. D. & Co."

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Detroit, Mich.

NEW PREPARATIONS.

Vol. I. Detroit, April 15, 1877. No. 2.

THE SIZE OF OUR JOURNAL is increased this month, owing to the printing, in full, of the article upon sugar-coated pills by J. B. Moore, (*Am. Jour. Pharm.*) We trust it will be read by each one of our friends, as it is on a subject worthy of their attention. A few years ago, as a result of several experiments, we published an article upon the solubility of sugar-coated pills, and find that the deductions made by Mr. Moore fully bears out our assertions then made.

OUR JANUARY NUMBER has been warmly received by the profession with many expressions of commendation and compliment. Applications for copies have poured in upon us to such an extent as to exhaust our supply of 20,000, necessitating a second edition.

WE STILL EXTEND to Physicians our offer "to mail the remaining numbers of NEW PREPARATIONS for 1877 gratuitously to any one ordering them." Send the name of one or more of your medical friends if you choose.

PHYSICIANS subscribing should take care to write their address plainly, or, what is better, enclose a printed card, letter-head or label.

BACK NUMBERS will be sent to any Physician who will send us his address, and enclose ten cents in stamps.

OUR MOTTO—*remedium non condemnatum est, donec id expertum sit*,—is as extensive in its application as the domain of Botany, and so we call upon all to favor us with reports upon the action of remedies (of course proprietary or patent we do not mean to include) that have been lately put upon the market, or those found successful in private practice, although the remedy may not have seen the drug market at all.

WRITE BRIEFLY and to the point, covering but one page of *note* paper, or two pages if the case reported is unusually interesting.

SULPHATE OF QUININE.

The trade in quinine is just now the subject of perhaps more than usual interest, owing to the marked advance during the past eight months, during which the manufacturers' price has risen from $2.20 to $3.75 per ounce, while outside holders now obtain $4.00 to 4 25. This is owing to a decided advance in the price of cinchona bark, both here and in London, which has been caused by the insurrection in Columbia—an important source of supply—which renders the prospects for the future supply entirely problematical. The quinine trade is exposed to the disturbing effects of frequent revolutions in Columbia, as the most of our supply of bark comes from that country, while Europe draws a great portion of its supply from India. It is stated that the total number of cinchona trees in India is 2,765,000 of the red bark variety, which, though it does not yield so much quinine as the yellow, yet it is said to give more alkaloids, which as a febrifuge are nearly as effective, and are, moreover, easily extracted. These trees occupy about 3000 acres, and most of the bark is sent to London.

In 1866 the government of Madras, a country greatly troubled with malarial diseases, appointed a medical commission to prepare a report with reference to the efficacy of the products

of cinchona bark, from which it appears that the number of cases of paroxysmal and malarious fevers treated was 2,472—836 with quinine, 664 with quinidine, 569 with cinchonine, and 403 cinchonidine—these terms referring to different alkaloids extracted from Peruvian bark. It further appears that the ratio of failures to the 1,000 cases was 6 for quinidine, 7 for quinine, 10 for cinchonidine and 23 for cinchonine—the latter extract thus seeming to be the least valuable of any.

The trade in quinine is in this country, as well as most other parts of the world, a very important one. The consumption in the South and West, where miasma is especially prevalent, is annually very large, but the demand very easily supplied by our manufactories, most of which are in Philadelphia. The present cost is not only higher than a few months ago, but considerably more than at this time last year, when manufacturers' price was $2.20. Most of the quinine consumed in this country is of domestic manufacture; for, although the duty on foreign is by no means prohibitive, and French quinine can in fact be bought here and sold at under the price of American, the annual importations of the foreign product reach only a moderate quantity.

This great consumption of the sulphate of quinine has made this salt a "leader," or "bait," in all general transactions in drugs—wholesale dealers, exerting every energy to increase their business, are wont to reduce the price per oz. to figures which afford them only a microscopic margin. Manufacturers of the various pharmaceutical preparations of the salt, have also been drawn, unfortunately, into the commercial vortex by mutual competition. We say unfortunately, for the history and laws of commercial transactions admonish us that when goods are marketed at an *actual loss*, a remedy is sought in adulteration, or short weight—indeed, some foreign firms are calling for adulterated articles.* Messrs. Howard & Son, of London, report a letter received by them from a foreign merchant, who, though he had a high opinion of their quinine, found it too good for his market. He promised them large orders if they would put up, expressly for him, half-ounce vials, containing 65 per cent. of quinine, and 35 per cent. of magnesia, so that he might compete with a French product, containing, he said, 25 per cent. of magnesia. We hardly suppose that Messrs. Howard had to wrestle long with the temptation, and it was unnecessary for them to remark that they sent their correspondent "a suitable reply."

Quinine Pills.

In the hands of the wholesale druggist, quinine is sold in sealed bottles, to which are affixed the stamp, trade mark and label of the manufacturer†; thus ensuring the genuineness of the contents, at least, until the price shall tempt the counterfeiter to imitate these marks of origin. When, however, these marks are erased, and the mixture undergoes manipulation in the process of the manufacture of *elixirs*, *pills* and other *pharmaceutical preparations*, the identity of the salt is lost, and an opportunity for adulteration is offered. Analysis now becomes a difficult and complicated operation, and physicians are compelled to accept now the reputation of the manufacturer as a guarantee for the purity of the several preparations.

Let it be borne in mind that we neither accuse nor suspect any of our manufacturing houses in good standing of any leaning toward misrepresentations of any kind. We simply have made these remarks from inferences drawn from the commercial history of the past. If our physicians will but take the trouble to examine into the probable cost of these expensive preparations, taking as their basis the quotations given in their several priced drug-currents, or in their medical journals, they will find that for the past year sugar-coated pills of quinine have been sold by

**Adulterated Sulphate of Quinia* has been noticed in France by Dr. P. Jaillard; it contained the almost incredible amount of 70 per cent. of potassium nitrate. The adulterated article had the appearance of the pure salt, but possessed a bitter and saline taste, was to a large extent soluble in water at the ordinary temperature, only in part soluble in strong alcohol. The aqueous solution heated with an acid solution of ferrous chloride, oxidizes the latter readily. The salt heated upon the blade of a knife deflagrates and leaves a white ash.—*Jour. de Phar. et de Chim.*, Nov., 1876.

† Since the above has been in print our attention has been directed to the remarks of A. W. MILLER, M. D., Ph. D., on Adulteration, (Pharmaceutical Meeting, January 19, 1877), from which we make abstract as follows:

Sulphate of Quinia, put up in the usual style of the American manufacturers, has heretofore been regarded as being above reproach. Even our lately much abused dealers in *pure* essential oils in New York contented themselves with operations in Pelletier's French quinia. My information is to the effect that a year or two ago, in one of our Western cities, the labels of American manufacturers were deliberately soaked off, after which an admixture of salicin was introduced. The label was then replaced, and the article disposed of. Another somewhat more enterprising dealer in the same city had muriate of cinchonia manufactured on his own premises, and used this to adulterate sulphate of quinia to a large extent. In this case the preparation was put up in tin-cans without bearing the name of any manufacturer.

manufacturers to the wholesale trade at wholly unremunerative prices. The recent advance in quinine has necessitated a corresponding advance in the price of the pills, and Physicians will find it not only just, but profitable to discourage *the cutting of rates below the actual trade value of the crude articles.*

The high price of quinine has long stimulated the search for substitutes, which will produce the required therapeutical effect, and yet cost materially less. We give a few of those agents which have received commendations from the profession, as substitutes for the quinine sulphate, among which are the other alkaloids of the the cinchona bark, as

Quinidia Sulphate.

Probably of all the alkaloids of the cinchona bark, none approach nearer, in therapeutic value, to quinia than quinidia. It has been pronounced by many physicians as in reality superior to the former both in therapeutic efficacy as an antiperiodic and tonic, but also in the marked absence of the cerebral symptoms. By reference to the extract from the report of the Madras government, as quoted above, it will be seen that quinidia produced better results per 1000 cases than either of the other alkaloids. Sulphate of quinidia is now sold by manufacturers at less than half the price of quinia. It is really a matter of surprise that the profession have been so slow in recognizing the high rank of this alkaloid, especially when the price is so low in comparison with its better known rival. Sugar-coated pills of this salt are offered of the following sizes: 1, 2 and 3 grs.

Cinchonidia Sulphate.

Sugar-coated pills of this alkaloid are made by our manufacturers in 1, 2 and 3 grain pills. As a testimonial of the value of this alkaloid in malarial diseases we have the following estimate of its merits as given in the *Transactions* of the Kentucky State Medical Society, by Dr. J. A. Larabee.

First, it is preferred by patients, because it does not produce so much cerebral disturbance and nausea. When given in doses about one-fifth larger than quinine, it is quite as efficient as the latter when restricted to ordinary varieties of malarial disease. In some cases of remittent, it does not act so promptly in checking the fever, and in every case Dr. Larabee says he was compelled to substitute quinine, to save time and trouble, thus showing that its febrifuge power is much feebler, though it may be said that the effect might have been produced by still further increasing the dose, which, however, would have been objectionable, on account of the bulk.

At the Bellevue Hospital the surgeons have declared cinchonidia to be a valuable tonic and febrifuge, but found it to be quite inadmissible in severe surgical injuries, especially to the genito-urinary system, and in cases of shock, by reason of its tendency to induce emesis and congestive symptoms. In such cases cinchonidia had to be abandoned, and quinia substituted. In purely medical affections, however, such as fever, pneumonia, etc., its use was attended with good results. When the tonic effects of cinchona are desired, cinchonidia may safely be resorted to, a fact of considerable importance, bearing in mind the difference in price of the two salts.

The fast increasing sale of this alkaloid, though comparatively new to the American profession, would indicate a growing confidence in its merits, based on practical experience.

Cinchonia Sulphate.

Physicians differ materially in their opinions of the relative value of cinchonia as compared with quinia, some claiming that the former possesses all the properties and strength of the latter, while others state that it is equal only in its tonic properties, being decidedly inferior as a febrifuge. There is no question, however, as to the therapeutic value of sulphate of cinchonia in the treatment of malarial diseases, both in the way of a tonic and as a prophylactic. Though in our opinion, it is much less efficient as an anti-periodic, than the other cinchona derivatives. While in the same dose it may be found inferior to quinine as an antiperiodic, yet in many cases an increase of from one-quarter to one-third the dose will produce the required effect. Physicians in India, however, state that in a tropical climate it cannot be used as a substitute for quinine on account of the cerebral disturbance it is apt to produce. In pilular form we have it in 1½ and 3 grains each.

The combined alkaloids.

Then we have chinoidine and also the alkaloids combined. These, in a slightly increased dose, seem to possess the anti-periodic qualities of the quinine sulphate, and as general tonics, may be preferred to it. The ringing of the head and other unpleasant symptoms seem to be avoided by their use, and so certainly speak much in favor of these cheaper salts, when simply a tonic action is desired.

Physicians have long acknowledged that the Calisaya *bark* will produce effects that quinine is incapable of producing, yet are restricted in its use, on account of the size and nauseating features of the dose. Mr. E. H. Sargent, of Chicago, recommends, as a substitute, the mixture

of the alkaloids in pill form after the following formula, (which is now offered by manufacturers under the name of "*Pil. Calisaya Alkaloidæ.*")

℞ Quiniæ Sulph. ¼ gr.
Quinidiæ " ¼ "
Cinchoniæ " ¼ "
Cinchonidiæ " ¼ " for one pill.

Although this formula does not exactly represent the combination of the alkaloids as found in the bark, yet from the satisfaction derived from its use, it is deemed unadvisable to modify it.

Ammonii Carbazoas (Picrate of Ammonium,)

Is another substitute that has been offered for the salt under discussion. This is furnished in sugar-coated pills of ½, ¼, ¼ or 1 grain each, according to the wish of the prescriber.

In a recent communication to the Societe Therapeutique de Paris, Dr. Dajardin-Beaumetz investigated the character, properties, and uses of Carbazotate of Ammonia (combination of Ammonia with Carbazotic, Picric, and Trinitrophenic Acid), especially as a therapeutic successor to Sulphate of Quinine. After relating the successful employment of this salt in intermittent fever by Braconnot, Calvert, Aspland, Bell, Chazereau des Thureaux, Manopa, ect., Dr. Beaumetz gave the result of six cases treated by himself, and of various experiments carried on upon animals and man. Like Quinine, Carbazotate of Ammonia diminishes the strength of the pulse, and brings on heaviness, cephalagia, and even delirium, and is eliminated by the kidneys. These effects have again been stated by Dr. Beaumetz. As to the clinical results, they may be summed up thus:

Case 1. Quotidian ague; recovery after four days' treatment; daily dose from one to two centigrammes of the substance in pills.

Case 2. Quotidian ague (Sulphate of Quinine having been given without effect); complete recovery after five days; five pills used.

Case 3. Tertian ague; recovery after eight days; two pills a day.

Case 4. Quotidian ague; recovery after eight days.

Case 5. Facial neuralgia; speedy recovery.

Case 6. Tertian ague (Sulphate of Quinine had been administered during seventeen days with no result); completely cured after the administration of six centigrammes (about one grain) of the salt for two days.—*Pacific Medical and Surgical Journal.*

Dr. W. C. Person, writing to the *St. Louis Med. and Surgical Journal*, says:

In malarial sections such quantities of quinine are necessary, that physicians will welcome the introduction of an antiperiodic, that will prove a valuable adjuvant to, if not a complete substitute for quinine. The objections to quinine are numerous, but the chief ones are *cost, difficulty of administration, constitutional idiosyncrasy*, and last, not least, the *difficulty of getting a pure article. The inducement to adulterate is too great.* The quantity of quinine necessary to prevent a paraxysm of pernicious intermittent, in this section, would astonish the physicians who accept the teachings of the Dispensatory in regard to quantity. The small size of a dose of medicine is of no minor consideration to the party who takes it. Repeated disappointments in the effects of quinine last summer, induced me to experiment with a sample of carbazotate of ammonium. I have been using it constantly ever since, in a great many cases requiring the use of an anti-periodic, with more uniform success than I generally derived from either quinine or arsenic. Several of my cases seem to indicate that it arrests the paroxysms more completely than quinine. I have succeeded with it in chronic quotidian ague of long standing, while quinine, arsenic, and the whole catalogue of tonics and alteratives had been tested thoroughly. For ordinary chills, so prevalent in the Southern States, I have ceased using quinine entirely. In order to test the virtues of the drug more fully, I divided my stock of the salt with another physician, who reports perfect success. In one case, however, it produced free emesis and intense cephalagia, the effects of an overdose, probably. It is rarely necessary to give more than one grain twice daily, until six grains are given, before I obtain the proper effect. I have never had occasion to push the remedy to the extent of producing discoloration of the skin. I have not tested its efficacy so thoroughly in remittents as I have in intermittents. But my observation, as far as it extends, proves it to be as effective in one form as the other. I have given it, regardless of febrile excitement, with impunity, and with the happiest effect.

The result of my experience is, that while quinine possesses so many valuable and varied therapeutical properties, it is not likely to be superseded by any other remedy, yet carbazotate of ammonium possesses properties which render it preferable to quinine in a great many instances as an antiperiodic, and is therefore worthy a trial.

Warburg's Tincture.

This preparation is also offered as a substitute for quinine. If not less costly, on account of the presence of quinine itself as one of the ingredients, it is said to be more effectual as a febrifuge and thus in the end more economical. To meet the numerous inquiries as regards the composition and uses of this remedy, we reprint two articles relative to the subject, which will be found on page 17 of this number.

Eucalyptus.

Eucalyptus has also been extolled as a febrifuge. It is used to its best advantage, perhaps, in the chronic cases, or those complicated with sluggish livers, and general malaise. For a more complete history of its anti-malarial powers see our following article. It is furnished in 2 gr. pills of the extract, or in the compound eucalyptus pill, each pill containing of the extract of eucalyptus, 1 gr.; of the extract of sanguinaria, ¼gr.; and of the extract of apocynum, ¼ grain.

EUCALYPTUS GLOBULUS.

By C. HENRI LEONARD, M. D.

Botanical Name, *Eucalyptus Globulus.* **Habitat,** *Australia.*
Local or Common Names, *Blue gum, Fever tree, &c.* **Medicinal Part,** *The leaves.*

The tree from which this remedy is obtained is one of the finest specimens of the Australian forest. It is an evergreen and belongs to the natural order of Myrtaceæ, the same order that gives us our clove, cajeput, pimento, and other similar vegetable products of our *materia medica.* In its mother country it grows to a gigantic size, corresponding therein, in its native woods, to our "big trees of California" of the American forests. It is not unusual to find specimens four hundred feet in height. In 1862 a plank was taken from the body of one of these trees, and sent to England, that measured 65 feet in length, ten feet in width, and of a proportionate thickness. It was desired to send one that was 160 feet in length, and of proportionate size otherwise, but no ship could be found that could transport it. The wood is compact, quite heavy, and is impregnated with balsam, or resin, that gives it valuable keeping qualities, and of great use in the arts. From its resinous character, it is of more value for ship-keels than our rock elm; and it is this same resinous principle of high nautical value, that makes it of so much interest to the pharmacist and physician. Besides these general features, it has another important one, that of rapid growth. Forests spring up in a single decade of years. Trees twenty and thirty feet in height, in the Channel Islands, have been seen in four years from the planting time. In Texas they have been known to grow, from Spring to November, to be 10 or 12 feet in height. In Florida a growth of 5 feet in four months has been recorded. In California a growth of 40 feet, in height, with a diameter of one foot, has been obtained in four years' time. As a shade-tree, it is not of value, as the trunk is so tall, straight and limbless save at the top, that the sunlight always strikes the ground, even at the base of the tree. The curious position and shape of the leaves also permit of this thorough permeation of the sunlight, a characteristic of the Australian forests.

We have just alluded to the peculiar shaped leaves: in the young seedling they resemble our common myrtle leaves; but as the trunk lengthens out into its straight and slender form, the leaves also partake of a similar formative growth, so that in the mature tree they are one inch in width, by from four to seven inches in length. In color they are of a pea-green shade, which gradually turns darker as the plant matures. Instead of turning their flat surface to the sun, as is common with our tree-leaves, they hang in a drooping fashion, from the stem, and so present only their edges.

Its fruit, preceded by purple-hued and solitary flowers, resembling our myrtle flower, except that they are more full of honey than our myrtle, is a reversed cone with four prominent sides, and hangs high up, near the top of the tree.

It is from the leaves, and flowers, that the most of the medicinal portions are obtained. Still, the wood contains them all, but in a lesser ratio, and less managable form. It is the oil, Eucalyptol, that is probably the active ingredient in the different eucalyptal preparations.

The first experiments upon its antifebrile qualities were made by Dr. Tristany, in Spain, in 1871. They were corroborated by the trials made by Dr. Brunel, of Montivedio, and since then by the leading practitioners of most civilized countries. Besides their therapeutical value, of which we shall speak further on, the tree in its living presence is invaluable as a prophylactic to certain diseases arising from exposure to malarial miasm.

Tracts of land rendered absolutely untenantable, from the ravages of malaria, may, by the influence of the trees growing thereabouts, be made fruitful and healthful. This has been tried in many countries, under many varying circumstances, and with uniform success. This is due to a three-fold action, viz: The high, open growth of the tree, heretofore alluded to, permitting the free entrance of sunlight and air about the roots of the trees; the free and rapid growth of the tree, thus furnishing ready drainage for the sweltering swamps about which they may be planted; and lastly, by the anti-malarial influence of the balsamic odors with which it impregnates the surrounding air. The second factor is probably as important a one as any in the make-up of the anti-malarial influence of the tree. When you come to put into figures the amount of representative moisture daily exhaled from one of

these trees, the result is really surprising. Of course, no exact computation has been made; but from certain crude experiments made by the writer a half dozen years ago with the common maple-leaf—a tree of slow growth, and one delighting in warm *dry* soils—we are sure that this factor is greatly underrated. Assuming one grain an hour to be the moisture-exhaling work of each leaf (and this is less than our experiments with the maple leaf would warrant), we have then from twelve to fifteen grains of moisture daily as the representative draining-work of each leaf; multiply this by the total number of leaf-elements in a grove of Eucalypti and you get an enormous product. Gimbert states that a single tree draws *ten times* its own weight of water from the soil in which it grows, every 24 hours.

As to the influence of the aroma, or balsamic odor, it is enough to mention that the toxicological influence of the drug is made manifest in many individuals by simply breathing the strongly-impregnated air about the grove-premises. We will need to mention but a single instance, out of the many that could be cited, of the anti-malarial benefit derived from a grove of these trees. Dr. Logan, of Kern County, California, wrote that he had given the anti-malarial influence of the Eucalypti a fair test upon his own place. He says: "This is cultivated by two Chinese companies; one company lives on the north and the other on the south end of the premises, about three-quarters of a mile apart. The localities both parties inhabit are favorable to the developement of malaria, and, as might be expected, they have, every year during the heated term, suffered with malarial fever. Last winter we determined to test the much vanted virtues of the Eucalyptus. In February we gave to the party at the north end two ounces of seed, with direction that they should be planted near the house. They germinated finely, and produced several thousand of the young plants, but the frost killed most of them. About 1200, however, survived. These, when the heated term had commenced, had obtained a height of about two feet, and emitted a strong aromatic or camphorous odor, perceptible at a distance of a hundred yards. In due time the party at the south end were visited by their usual mildly-distressing fever, but up to the present time (about the middle of the season) we have looked in vain for the first symptoms to develope in the other. They are all, to their own astonishment, in robust health. These trees now average more than three feet in height, and the atmosphere of the houses is strongly impregnated with their odor." The doctor then adds that though carefully searching for hygienic causes, other than the Eucalypti, none could be found. He has since planted all of the waste places of his farm with the trees, so firmly does he believe in their anti-malarial virtues.

Our northern climate is too rigorous for the growth of the Eucalypti, though a few trees are known to be in Detroit, but here in hot-houses.

As to the therapeutics of the tree. Hereon quite a volume could be collected of the reports of successful cases. We spare you most of this and give only some of the more important and practical tests, or new uses of the drug.

Dr. Wooster, of San Francisco, California, in a report of 136 cases of various diseases treated exclusively with fluid extract of Eucalyptus Globulus, gives the following results: Remittent fever: cases treated, 5; cured, 5. Intermittent fever: cases treated, 19; cured, 19. Typhoid fever: cases treated, 9; cured, 9. Nephritis: cases treated, 4; cured, 3; improved, 1. Diuresis: cases treated, 10; cured, 7; improved 3. Incontinence of urine: cases treated, 3; cured, 3. Vesical catarrh: cases treated, 27; cured, 25; improved, 2. Blennorrhagia: cases treated, 13; cured, 10; improved, 3. Valvular disease of heart: cases treated, 7; cured, 0; improved, 7. Dysentery: cases treated, 4; cured, 3; improved, 1. Chronic diarrhœa: cases treated, 13; cured, 9; improved, 4. Gonorrhœa (syphilitic): cases treated, 15; cured, 10; improved, 5. Dropsy: cases treated, 6; cured, 3; improved, 3. Of the whole number of cases, 106 were cured and 29 improved.

Dr. Keller, Physician in chief of the Australian Railway Company, reports the following cases, with results, as treated with Eucalyptus. The total number of malarial cases was 432. Of them 310, or 71.76 per cent, were cured; 122 required a supplementary course of quinine. Of those cured (310), 202 needed but a single dose of the remedy (the tincture); the remaining 108 cases had one or more subsequent paroxysms. Quinine had been given previously to the Eucalyptus in 118 out of the 432 cases. Of the 122 cases in which the remedy failed, 58 were cured with quinine, 10 were sent home, 16 remained under

treatment and 38 remained in *statu quo*. Out of the 118 cases in which the quinine had been previously given, but failed of arresting the disease, 91 recovered under the influence of Eucalyptus, the remaining 27 were unbenefitted. The several types of fever were as follows: Complicated quotidian, 117; simple, 73; total, 190. Complicated tertian, 126; simple, 95; total, 221. Complicated quartan, 16: simple, 4; total, 20. Complicated quintan, 1. The complications were splenic and hepatic engorgements, anæmia, chronic gastric catarrh, paludal cachexia, etc. The remedy proved itself successful in 161 (61.9 per cent.) of the complicated cases, and in 149 (86.6 per cent.) of the simple cases. Cures classified according to the types, we find successes in the tertian, to have been 75.57 per cent.; in the quartan, 70 per cent.; in the quotidian, 67.89 per cent. The remedy, in a single dose, arrested the disease in 107 simple, and 95 complicated cases. The treatment was generally commenced on the fifth day after the first paroxysm, and the average duration was but 9½ days; whereas, in previous years, when quinine was employed, 12½ days was the average time of treatment. The tincture was made by macerating, for three months, the leaves in alcohol. Ten pounds of the leaves yielded twenty-five quarts of the tincture; the average dose was two drachms, and the average quantity used per patient was seven drachms.

Dr. BURDEL has employed it in 50 cases of quotidian, 39 of tertian, and 34 of quartan ague. The powder, tincture and solid extract were made use of. In 57 cases he derived no benefit. The treatment extended from five to ten days. The extract in 10 to 12 grains, daily, was found most beneficial in preventing relapses; this was given for five or six days after the arrest of the paroxysm.

CASTAN reports 33 successful cases out of a total of 44 cases treated with the drug. MEES, out of 35 cases had 13 cured, 10 greatly benefitted, and 12 partially relieved.

LORINSEN cured 43 cases out of 51 to whom he administered the tincture as an antiperiodic. In one case of failure, both it and quinine where unavailing. BOHN reports a case of a child with masked intermittent, with cerebral complications, where the tincture in drachm doses proved successful in relieving the symptoms in four hours, and he recommends it in puerperal fevers. BOYCE details a case of ague that had resisted quinine and arsenic, and was cured by the Eucalyptus in four days. He has used it with great success in catarrhal affections of the urethra. The oil he recommends as of use in odontalgia. CURNOW, of London, speaks of a Norwegian that had been five weeks with an attack of ague, tertian type. The temperature was from 104 to 105.6° F. at the acme of the fever before the administration of the tincture of the drug. The administration was commenced on a day preceding an attack, and given in drachm doses *ter in die;* it modified the attack on the following day so that the highest temperature of the paroxysm was but 100° F., instead of the customary 105°. No further return of the paroxysm was noticed. In another case, a Dane, who was admitted to the hospital after an attack of five days duration, with severe paroxysms, lasting some twelve hours each time. The highest point of temperature reached at each attack was 106.4°. It was of tertian type, and just before the next attack was due, the administration of Eucalyptus was begun, in the same dose, etc., as before. The next two attacks were modified in their severity, and were much shorter; the dose was then doubled, and he had but a single attack following this date.

TALBOTT, of Ohio, gives us the following cases as a representation of what the remedy is doing for him in malarious cases.

Mrs. V., aged 38, a farmer's wife, very much emaciated, having been suffering from intermittent fever for several months, which had assumed the double quotidian type. For the last ten days she was not able to be out of bed. The paroxysms came on regularly at 7 A. M. and 10 P. M., and were accompanied with very slight chilly sensation and some coldness of the feet, followed by very high fever and profuse perspiration. I gave her very large doses of quinine without any effect; also gave arsenite of potash with the same result. I then gave gtts. lx. of fl. ext. Eucalyptus every hour and a half, commencing in the sweating stage and continuing it until the time for the next paroxysm. She did not have any return of the attacks, and has continued well ever since.

Mr. P., aged 26, German, baker, had been treated for remittent fever for eight days by my friend Dr. B., of this place, and he had been given him very large doses of quinine without interrupting the paroxysms. He became dissatisfied and sent for me. I gave him gtts. lx. every hour and a half of fl. ext. Eucalyptus, commencing during the sweating stage

and continuing until he had six doses. He had no more fever, and commenced his usual occupation in a few days.

Mr. and Mrs. S., middle aged, moved to this place from Port Jefferson, both suffering with intermittent fever. He had been laboring under the quartan type for eight months, and she had been troubled with the quotidian type for the last two years, more or less, and had had it for the last six weeks regularly. She was pregnant, seven months advanced, anæmic, with a sallow complexion, spleen very much enlarged, reaching about four inches below the free margin of the ribs. Before trying the Eucalyptus, I gave xx. grs. of quinia in the sweating stage, without any effect in either case. I then opened the bowels in both cases with hydrag. chlor. mit., and followed it with the usual doses of Eucalyptus; there has been no return of the disease in either case.

These experiments, although confined to a small number of cases, seem to show that there are cases in which quinine proves inefficacious. In such cases it is important to possess a remedy that will answer. And I believe that Eucalptus possesses that power. And, besides, it does not cause those distressing head troubles that belong to quinia, and it is not nearly so disagreeable to the taste.

In the external application of the Eucalyptus as good reports have been universally given, and it is more especially to this use of it that we would now call your attention. In the United States this has not been so much dwelt upon as on the continent, probably through lack of its employment as an external remedy. As a stimulant to foul, or gangrenuos ulcers, bedsores, and in cases of vaginitis, offensive leucorrhœa, chronic bronchitis and the like it is one of our best vegetable preparations. DUPUYTREN (Pigne) details a few of the cases in which he has made use of it in his hospital practice. A man who had arteritis of the leg, succeeded by gangrene, which extended so high up as to render amputation impossible. In two weeks a large ulcer resulted, whose odor was horribly fetid. Everything in turn was employed to destroy this odor, to no effect. At last a decoction of Eucalyptus was resorted to, and, without exaggeration, he states, in five minutes all fetor had disappeared. The decoction continued to be used with the same effect until death occured, two or three weeks subsequently.

Another man, who had been under treatment in the Hospital for two months, with extensive, deep ulcer from varix, of a year's duration, had the decoction applied to the ulcer three times a day, with remarkable effect. In five or six days the ulcer was entirely covered with healthy granulations, and in a month it was entirely well.

A woman had been troubled for many months with an ulcer around the orifice of the urethra. It was cauterized five time with no result. After twelve days use of the decoction of Eucalyptus, washing thrice daily, it was well.

Four cases of syphilitic chancres healed under the Eucalyptus dressing in five or six days, without other treatment. These were very recent cases, or constitutional treatment would have been resorted to.

A man that had intermittent fever that had proved rebellious to quinia, and also to arsenic, which latter had been administered for two weeks, after a three weeks' course of the Eucalyptus was cured entirely.

So numerous are the cases of bronchitis cured with the drug, he states, that it is hardly worth while to mention them.

WOODWARD has used the tincture as a disinfecting and anti-septic enema in case of retained and decomposed placenta with marked success. Also in a case of putrid dysenteric passages, the Eucalyptus given internally changes the offensiveness of the stools, besides checking their frequency. In a case of diphtheria where death was supposed to be inevitable, the local application relieved the fetor, and assisted in checking the farther spread of the disease. He has also employed it in a single case of neuralgia dependent upon the malarial taint. Other remedies were fruitlessly tried before resorting to the Eucalyptus. In twenty-four hours the relief was permanent. He gave it in fifteen drop doses.

LEARY, in a recent discussion before the "King's County Medical Society," says that for four years he has used it as nearly a specific in gonorrhœa. He noticed then its great diuretic powers, and so has since given it, in ten minum doses of the fluid extract, in cases of dropsy. He briefly reports four, one due to *Morbus Brightii*, another to cardiac hypertropty with dilatation, the third to cardiac disease, and the fourth to cardiac hypertrophy, where remarkable success followed its administration. He has also made frequent use of the remedy in passive congestions of the kidneys, and always with benefit. He noticed that sometimes his patients would complain of *tinnitus aurium*, and headache from the passive cerebral congestion.

WOOSTER states that he has used gallons of the fluid extract in the U. S. Marine Hospital, and was surprised at its uniform and reliable effects in the diseases for which it is re-

commended. He certifies that it is a valuable diuretic, and may be administered when others are inadmissable. It is an aromatic tonic, and as such especially indicated in low states of the system as we see in typhoid fever, diarrhœa and dysentery. In vesical catarrh it has proven a reliable remedy in his hands, and many cases of gonorrhœa, he says, he has quickly cured by the use of this remedy alone. Indeed, in *all* affections of the mucous membranes its beneficial action is noticed. As an external application to foul ulcers he avers, it is of great value.

LIMBERT has successfully treated wounds by the application of the fresh leaves to the parts. After a few hours all the unpleasant odor emanating therefrom is counteracted and a healthy state of healing goes on to complete cicatrization.

BUCQUOY (of Cochin Hospital, Paris) asserts that of all the drugs he has made use of in pulmonary gangrene, none have given him the satisfaction that Eucalyptus has. Out of the various cases treated, five were complete cures, while the symptoms of all the others were favorably modified. The cough lessened, the sputa was less abundant, and the offensive odor was entirely absent, and this after carbolic acid had failed. He uses it in the form of an alcoholate, half a drachm in a mixture of syrup, gum and orange-flower water.

These anti-septic properties of Eucalyptus are due, mostly, to the oil (Eucalyptol) contained in the various preparations made use of. It (the oil) has been known to preserve blood for over five months from decomposition, (as long as carbolic acid will do the same), which is longer than turpentine will keep it unchanged. LIMBERT and BIRCH have both made experiments to this effect, and both confirm the statement. The action of the remedy upon the white blood corpuscles is analogous to that of quinine, as it restrains their amœboid movements, and hence its usefulnes in the class of troubles, congestive in their nature, where it may be locally applied.

As an item of agricultural interest it may be noted that it has been asserted by French writers to be a remedy for phylloxera; that trees growing near the grape-vines protect the vines from the ravages of this parasite. Experiments have also been made with the essence of the drug upon the diseased vines, by ABBE ROLLAND, in the manner of innoculation, and with such success that he has pronounced it, after a trial of two years of its virtues, "an infallible remedy." He makes a broad incision through the bark at the neck of the vine, and into this drops a few drops of the essence, or rubs it over the cut surface with a camel's hair brush. The result is, as he says, that in three or four days the parasites are destroyed, but the vine remains uninjured. The incision may be made in any other part of the bark, but the desirable result is most speedily obtained by making is as near the roots as possible.

We have now, in a sort of a rambling way, given you an insight to the literature of the drug. A volume could be collected, from various reliable sources, upon its hygienic and therapeutical value, but we trust that what we have given will be sufficient to call your attention to its chief merits. The literature is emphatic in its pronunciation of its success as an anti-malarial agent, as a remedy of great value in chronic inflammation of the air passages, as an anti-septic in surgical dressings, and as of value as a local application upon any inflamed mucous surfaces. Yet with all this literature at its back, it is a remedy of recent date. Prior to 1871 it was little known to the profession east of the Pacific slope. PARKE, DAVIS & CO. were the first to bring it before the professional public in the form of a fluid-extract, and their first order, for only *twenty-five pounds* of the young leaves, exhausted the New York market. The price then paid was exhorbitant; but it is now so generally called for, from their energetic advertising of its merits, that it is ranked with our drugs of lesser cost, and is of greater value than many whose age is more pretentious.

Preparations.

Fluid Extract—One-quarter to one fluid drachm.
Solid Extract—Dose, three to ten grains.
Sugar-coated Pills—Each pill contains two grains of the Extract.
Sugar-coated Pills Eucalyptus Comp. { Extract Eucalyptus 1 gr. / Sanguinarin ⅛ gr. / Extract Apocynum ⅛ gr.

LITHOTOMY.

Operation by H. O. WALKER, M. D., Lecturer on diseases of Genito-Urinary System and Rectum, at Detroit Medical College.

Hans Peter M., aged 51 years, lymphatic temperament, of slight build, native of Denmark, and tailor by trade, first came under my care through the kindness of Dr. J. H. Carstens. History is as follows: Was born and lived in Denmark until five years ago, when he came to this country. First noticed trouble in urinating and uneasiness in the region of bladder and penis about ten years ago, which has continued up to this time, March 13th, '75. The last three years his sufferings have been so severe that he has had, at times, to give up his trade, and latterly almost entirely so. There has of late been a frequent desire to urinate with considerable discharge of blood and pus.

Great pain was caused by riding in a street car, and walking a short distance necessitated sitting down. Although treated by a number physicians, no true diagnosis had been made of his trouble. On the first visit of the patient to the College Clinic Dr. Carstens readily detected stone in the bladder by an ordinary silver catheter.

My first examination with a searcher detected more than one stone, and unquestionably of more than ordinary size. A rectal examination by the finger did not reveal any enlargement of the prostrate body. No disease of the kidneys. Everything, therefore, was favorable to the operation proposed, namely, Lithotomy. The preparatory treatment was rest, diluent drinks, and a tonic of Sulph. Quiniæ grs. v, three times a day for a few days before the operation. The bowels were relieved by an enema on the morning of the operation.

Saturday afternoon, March 20th, 1875, I performed the operation at the patient's home, assisted by Drs. Carstens, Oakley, Laferté and Corcoran, in the presence of a number of medical students. The patient was etherized and placed upon a narrow table, the wrists being tied to the ankles and the hips drawn to the edge of the table. The searcher was again introduced to verify the previous diagnosis, and distinct clicking of the instrument against the stones was quite audible to those present. The staff was then introduced and held in position by Dr. Oakley.

The first incision was made after the manner described by Dr. Gouley in his work upon the *Diseases of the Urinary Organs*, by plunging the point of the knife a little to the left of the median raphé at one inch and a quarter anterior to the anal margin, until it reached the groove of the staff, then cutting the urethra longitudinally about half an inch, and completing the cut by a free incision outward and backwards to a point near the tuberosity of the ischium. The second incision was completed by the probe-pointed knife of Gouley, (used by him in external perineal urethrotomy), by cutting through the vesical neck, and through the prostate body about five-eights of an inch at an angle of about 80 degrees with the median line, and after several ineffectual attempts with the lithotomy forceps, it was evident that the opening was not sufficient to allow the passage of the stone. I increased it by making a similar cut through the right side of the prostate, and again introducing the forceps; without much difficulty extracted the larger stone, and immediately afterwards the lesser one. There was considerable hæmorrhage, but it was readily controlled by compression and the introduction of the shirted canula. After putting the patient in bed, gave him ten grains of Sul. Quin. and ½ gr. Sul. Morph. I deem the quinine highly important in all genito-urinary operations, however slight, both before and after the operation. Left him under the care of an assistant during the night. March 21. Patient passed a comfortable night. Pulse 80. Temperature 99°. Urine passed per urethram; removed shirted canula, and ordered continuation of five grain doses of quinine three times a day. March 22. Pulse 82. Temperature 99½°. Urine passed both through the urethra and the opening. March 23. Pulse 78. Temperature 99°. Very little urine passes through the opening. March 24. Pulse 74. Temperature 98½°. No urine has passed through opening during last twelve hours. Twelve days after the operation I called upon the patient and found him up pressing pantaloons. He continued to improve, and four weeks after the operation the wound was entirely healed. Prof. A. B. Lyons, M. D., examined the calculi and found them of the phosphatic variety. Size of largest

stone, 2 inches long, 1⅞ inches wide, and ⅝ inches thick. Small one, 1¼ inches long, 1 inch wide and ⅜ inches thick. Oval, compact, and almost smooth.

177 Griswold St.

USTILAGO MAIDIS.

Botanical Name, ***Ustilago Maidis.*** **Habitat,** ***The United States.***
Local or Common Names, ***Corn smut, corn ergot.*** **Medicinal Parts,** ***The fungus, exclusive of chaff.***

SUMMARY FROM OUR LAST ISSUE.—The Germans made use of this remedy as an oxytocic some dozen or more years ago. The homœopathic school of medicine have also employed it in their practice since 1866, using oftentimes large doses and getting therefrom ergotoidal effects. The history of its administration to pregnant animals, and the results therefrom occuring, would lead one to suppose it to be a proper substitute for ergot in many cases. The chemical analysis of the drug also shows its similarity to our ergot of rye.

The EDITOR has used it in midwifery with apparently the same effect as when secale cornutum had been employed. There seemed, however, to be a more marked *periodicity* of pains than that observed after the rye-ergot administration. In amenorrhœa he has also employed it with success.

Dr. WALTERS has employed it successfully in the treatment of spermatorrhœa.

Dr. KERR in a single case of midwifery, and with good success, where ergot was indicated.

Dr. WALKER, of the Detroit Medical College, also reports a case of labor where the "*delay*" was overcome by the administration of Ustilago, with as much celerity as if rye-ergot had been employed.

From Prof. JOHN H. LOWMAN, of the Med. Dept. University Wooster, Cleveland, Ohio, we have received a hurried "postal-card" report of its administration in a case of abortion, as follows:

"Have used Corn Smut once in a case of abortion where there was much hæmorrhage. The hæmorrhage diminished in 24 hours very much, but the pains did not increase. I gave ʒ 1 of the fluid extract every 2 hours, for 12 hours, afterwards the woman went on to recovery under general treatment."

Dr. A. G. WARD, of Libertyville, Iowa, sends us the following letter bearing testimony to the benefits derived from the administration of this new (to the profession of this country) remedy:

EDITOR NEW PREPARATIONS.

DEAR SIR:—I received a copy of your NEW PREPARATIONS a few days ago and my attention was drawn to the preparation of Ustilago Maidis. It has been rather a surprise to me that this valuable remedy has not been brought to the notice of the profession by some of our eminent obstetricians before this. Some years ago I was led to notice its peculiar effects upon animals as related in the American Cyclopedia, and its tendency to produce *abortion*. Acting upon the idea then conveyed to my mind, I made a small quantity of the tincture of the drug, using about ʒ ij of the smut to the oz. of proof spirit. This was given in several cases where the secale cornutum was indicated, and so far as I could judge, with much better effect than could be obtained by this remedy. In fact, in every case where the Ustilago was given, the pains were more regular, the uterine contractions *firmer*, and the intermediate *rest* more perfect, also the after-pain (when any occured) less severe and not long continued.

I have not (until lately) known of any *regular* preparation of the drug and sincerely hope that the one now manufactured by PARKE, DAVIS & CO. may be more extensively tried by the profession and its therapeutical advantages be made more fully known; and I have little doubt that ere long it will greatly, if not entirely, supercede the secale cornutum in cases where that drug is indicated.

With regard to another of the new preparations ("Damiana") I have had but little experience with it "personally," but have the word of one or two professional brethren, who have tried it, and if the favorable reports given by them are borne out in further trial, it must become a very valuable adjunct to our present scanty (and not very reliable) list of remedies of this class.

Dr. HARLOW, of Detroit, sends us the following brief note, detailing a case where Ustilago proved successful in the epistaxis of typhoid fever:

DETROIT, March, 1877.

EDITOR NEW PREPARATIONS.

DEAR SIR:—I would acknowledge the receipt of the first number of your quarterly Journal of Medicine, devoted to the introduction of new therapeutic agents, and your kindness also in forwarding to me from the very popular and reliable manufacturing firm of Messrs. PARKE, DAVIS & Co., of this city, sample specimens of their new remedies for test trial, all of which have satisfactorily met my expectations in fully coming up to their recommendations, and especially I would say that the fluid extract of Ustilago Maidis will, in my opinion, prove a valuable acquisition to the medical profession; it not only possesses more reliable properties as an oxytocic than secale cornutum, but has other therapeutic virtues of importance. Without particularizing in trial cases with this article, which has been very satisfactory in substitution for ergot, would state that in an obstinate case of epistaxis, accompanying typhoid fever, after trying the usual remedies in vain for suppressing hæmorrhage, I found the fluid extract of Ustilago Maidis to act like a charm. I remain, as ever, your much obliged friend,

A. HARLOW, M. D.

Dr. JOHN A. HAMILTON, of Odin, Illinois, sends us the following: "I have used this drug in two cases recently,—in each of which Ergot was indicated—and with such results as to induce me to give it further trial when favorable opportunities present themselves.

Mrs. W., aged 31 years, in her third confinement had been in labor 13 hours, in the hands of a midwife, without any signs of delivery. At the expiration of that time the pains became weak and far between; her friends became uneasy, and I was called to see her. On examination I found the parts dry, hot and sore, probably from too frequent examination. I found the fœtus lying upon its stomach, diagonally across the pelvis; left shoulder presentation, the face looking backward and upward. I gave a full dose of Sulph. Morphiæ, and waited fifteen minutes for its effect. Concluded then to try the Ustilago and administered half teaspoonful—at the same time prepared some Ergot, in case it should fail. Having warmed and moistened my right hand, I slowly introduced it into the womb, caught the feet and brought them down. In about ten minutes the pains were re-established, coming on regularly three or four minutes apart, with *perfect intermissions* and with good force. My patient was delivered, in about one-half hour, of a living child in tolerable good condition. The placenta was detached and came away in due time, and all went on well with mother and child.

CASE II. Mrs. C., 28 years of age, of good constitution and in second confinement In labor eight hours in care of an irregular physician. On my arrival he said there was a "*heap of bleeding whenever she had a pain.*" This was a case of placenta previa, and on examination I found a natural presentation with the placenta covering about one-third of the os uteri. There was no time to be lost as my patient was much exhausted from previous loss of blood. Therefore I introduced my hand, ruptured the membranes, secured the feet and brought them down—the hæmorrhage then stopped. But from some cause, while the hips were yet in the vagina, my patient became very faint, and her pains ceased. I removed the pillows from under her head and administered one teaspoontul of Ustilago with brandy. The system responded to the stimulant and oxytocic, and in five minutes, a return of pains ensued, resulting in the delivery of a dead, bloodless child. The pains continued three or four minutes apart, with good force, until the secundines were detached and expelled. All passed off well to the patient, who, by good nursing and attention, made a good recovery. There were but few after-pains.

There is one feature in the effect of Ustilago Maidis which, if it proves to be uniform and constant, far surpasses that of Ergot, or any other drug with which I am acquainted, as a uterine stimulant. I refer now to the *entire cession of pains between the pains proper*, as brought on by the administration of the Ustilago. But with my limited experience with the drug, only two cases, I am not a competent judge; still in the two cases above mentioned, I am sure this was a very prominent feature, and one not seen in the use of secale cornutum.

ODIN, Illinois, March 29, 1877. J. A. HAMILTON, M. D.

Preparation.

Fluid Extract—Dose, from ½ to 1 fluid drachm. One minim represents one grain of the crude drug

Administration.

Dilute with water and repeat every quarter of an hour, as an oxytocic.

XANTHIUM SPINOSUM.

Botanical Name, ***Xanthium Spinosum.*** **Habitat,** ***Europe.***
Local or Common Name, ***Spiny burreed.*** **Medicinal Part,** ***The plant.***

On the Properties and Use of the Xanthium Spinosum againt Hydrophobia.

BY DR. GRZYMALA.

Extract from the *Therapeutic Journal*, April 10, 1876, published at Paris, by Prof. M. A. Gubler.

We are in receipt from one of our honorable and distinguished confreres, Dr. Grzymala (of Krivoc-Ozero, Podolia,) the following letter which, by virtue of the, to us, well-known character of its author, seems to us well worthy of attention, an we hasten to publish it.

KRIVOC-OZERO, MARCH 22, 1876.

TO PROFESSOR GUBLER,

Dear Sir and most honored Master:

To-day, thanks to your powerful iniative, and to your important labors, a new era has been opened in France for Therapeutics, and that so many new means have been admitted to the rank of medical agents, permit me to call your attention, for a moment, to the therapeutic properties of a very common, but hitherto neglected plant, *Xanthium Spinosum*.

In this particular case, I am convinced that the physiological action of a diaphoretic, notwithstanding inferior to the Jaborandi, the Xanthium Spinosum, gives or will give the explanation of its effects against hydrophobia, for it is of the treatment of this hydrophobia that I wish to speak to you. This confession of faith, seems to me indispensable when that formidable malady is mentioned.

This plant, which grows in many countries, is found in the middle of France, in Podolia. It *infallibly* neutralizes the effects of the virus of the rabies on the single condition that it is administered in time, that is to say before the paroxysm of that terrible malady appears.

I have used the Xanthium, now a number of years, with the best success, and it has not yet been my lot to observe a *single* case where it has disappointed me—although I have had occasion to administer it at least a hundred times to men as well as to animals bitten by rapid dogs and wolves. You must not be astonished at these figures which, I assure you, are rather below than above the reality. In the country in which I live, rabies is very frequent; and for more than twenty years that I have used the medicine, ten cases per annum, on an average, will reasonably justify the number mentioned above.

What, would you say, are the physiological effects of this remedy?

A sudorific, a sialagogue, and a feeble diuretic, the action of which is less pronounced than that of Jaborandi. I have not, however, been able to produce all these phenomena together. Certain patients perspire, others are salivated, and there are some who pass more urine than in the normal condition. The temperature is slightly raised and the circulation is ordinarily but little accelerated under the influence of this plant. Some patients complain of cephalalgia, others of nausea. I have seen even those who have vomited the first dose of the medicine. Besides a continued state of perspiration during the continuance of the treatment, sudden attacks of dimness are noticeable, which come upon the patient from time to time during the day. The appetite in general is augmented, and the digestion is not at all disturbed by this plant, which I administer in powder.

The dose for an adult is sixty centigrammes of dry powder of the leaves of the Xanthium repeated three times a day and continued during three weeks. Children under twelve receive half this dose. It is needless to say that I never cauterize. Since I possess this remedy, I have no longer any fear of rabies.

Very nearly twelve years ago, one of my dogs took this disease, bit a cow, a pig, a dog, a cat and a tame crane. The cow, the pig and the dog were placed under treatment for three weeks. All three were left uninjured by the disease. The crane and the cat, which I had left without care, died of hydrophobia, the one at the end of three and the other eleven days after being bitten.

During the Crimean war, a family composed of twelve persons had been bitten by a mad wolf. Six of these persons entered into my service at the hospital of Olschauka (government of Podolia, district of Balta). These were all cured, while six others treated by the Cautery and the daily use of Cantharides, of *Faba-tonco* and *Genistra-tinctoria*, died mad in the course of twelve to sixty days.

Two years ago, six hunting dogs which I had were bitten by a mad dog (an animal which I was able to stop, and which I saw succumb at the end of two days with every symptom of rabies.) My bitten dogs were divided in two categories. Three were isolated and left without treatment. These died at the end of fifteen days with all the undoubted symptoms of hydrophobia. The others which were left at liberty, but placed under treatment (30 grammes a day in three doses in a porridge, for three weeks) still belong to me and have never been sick. One of them caused me to fear that I was disappointed, having disappeared the twelfth or thirteenth day of the treatment. It is known that dogs at the beginning of the rabies generally leave their master's dwelling. I did not know what had become of him; but at the end of three months I found him well, in company with a poacher, from whom I took him back. This dog is still with me, well. This fact proves that twelve days' treatment may be sufficient.

In 1873, Count Malachoski, proprietor of the Odessa country, came to consult me for his son, eight years old, bitten some three days before by a mad dog. Three weeks of treatment placed him out of danger. I saw him four months ago, looking remarkably well.

The son of M. Sadoski, (Volhynie) a boy seven years old, bitten by a mad dog in August, 1874, and placed by me under treatment of the Xanthium, has never experienced the least sign of hydrophobia.

Yet another fact, which I select, to be brief, from more than a hundred others. This was during the Crimean war: Messrs. Tarnaski, father and son, of Savran, district of Balta (Podolia), came to me. They had just been bitten by a dog supposed to be mad. The father's cheek was bitten nearly off; the son had over ten bites on his arms and legs. This last fact—of numerous bites—which is not habitual—made me suppose that the animal was not mad. We had, nevertheless, means of assuring ourselves that this *was* the case. The dog of these gentlemen had been bitten by the same beast. I kept the dog with me, and saw him, at the end of three days, take hydrophobia and die. Then only I placed my two patients upon the Xanthium, and *both* cured of their wounds (simply dressing them), are perfectly well.

The dose for animals should naturally be much stronger; thus, in 1868, I was solicited by our commissary of police, Mr. Lonkaschevitch (at Krivoc Ozero, district of Balta), to give him some of my powder—called in common in my country "Antirabic of Dr. Grzymala," for a herd of thirty horned cattle, all bitten by a mad wolf, eight of which were already down with all the symptoms of hydrophobia. I had each of the animals take 96 grammes (3 ozs.) of Xanthium in powder, in bran, daily for four weeks. None of the twenty-two beasts were attacked by the disease which is the subject of this letter.

All the facts which I here relate, my most honored master, are positive and actual realities which I can, if need be, support by proofs. I have not drawn upon my imagination by dint of gnawing at the barb of my pen, as is often the case. They are personally known to me, and, I repeat it, I have over a hundred others that I can place before you if desired. I confide them to you, soliciting insertion in your very estimable Therapeutical Journal. I am certain that experiments which you will be able to make with the leaves I send you, upon the physiological and therapeutical action, will confirm what I have stated, and I will thus have co-operated, though feebly, in that path of therapeutics which you and your distinguished colleagues have so splendidly opened. Respectfully, DR. GRZYMALA.

The above article from such a reliable source would seem to give us conclusive evidence that at last a remedy for hydrophobia has been found. Later reports, however, of the use of the drug in France fail to confirm the enthusiastic statements of Dr. Grzymala. Let us hope that Xanthium may be found effectual in the American type of hydrophobia.

Preparation.

Fluid Extract—(One minim to grain.) Dose, ten to twenty drops.

Administration.

To be given three times a day for three weeks.

YERBA SANTA.

Botanical Name, ***Eriodyction Californicum.*** **Habitat,** ***California.***
Local or Common Names, ***Yerba Santa, Bearsweed.*** **Medicinal part,** ***The plant.***

SUMMARY FROM OUR LAST ISSUE.—Dr. J. H. BUNDY wrote that in four cases in which he had employed the remedy in laryngitis or laryngio-bronchitis, it had proven successful. In three cases of hæmorrhoids, he had also been equally fortunate in its employment. He employed it in doses of from one-fourth to one fluid drachm of the fluid extract. As a remedy for laryngeal and bronchial troubles the Doctor thinks it is unequalled, basing this opinion upon his own experience in numerous cases, and the experience of that of many of his friends.

Dr. J. M. NEWELL, of St. Louis, writes that it is an excellent expectorant, diuretic, &c., and that it is a good injection in gonorrhœa, as well as given *per orem* in the same complaint.

Dr. J. W. HALL writes that he has used a half-a-pound bottle of the fluid extract in his own case, a severe cough of long standing, where the ordinary remedies had failed, and with excellent success. He adds, "I believe it will do all that is claimed for it."

Preparations.

Fluid Extract—(One minim to grain.) Dose, ½ to one fluid drachm.
Solid Extract—Dose, three to twelve grains.
Sugar-coated Pills—Each containing three grains of the Extract.

Administration.

Dilute with water and give pro re nata: it may be combined with Senega in coughs, and with Grindelia Robusta in asthma.

GRINDELIA ROBUSTA.

Botanical Name, ***Grindelia Robusta.*** **Habitat,** ***Pacific coast of United States.***
Local or Common Names, ***Grindelia, Gum Plant.*** **Medicinal Parts,** ***The plant and flowers.***

SUMMARY FROM OUR LAST ISSUE.—Dr. W. P. GIBBONS, in the *Pacific Medical and Surgical Jour.*, as quoted in full in our issue of last August, details seven cases of asthma in which Grindelia was used with success. When there were complications, other remedies were prescribed with it.

Dr. HENRY M. FISKE, in the *Pacific Med. & Surg. Jour.*, reports two cases of iritis which were promptly relieved by external applications of Grindelia, and states that these are selected from many others that he has recorded. He has also employed it, with advantage, in asthma, and as a palliative in cancer of the stomach.

Dr. JOHN E. CROWE, in the *Louisville Medical News*, in eleven cases of asthma, complicated with bronchitis, or heart disease, and in pneumonia, and found it favorable in its action in each of them.

The *Eclectic Medical Journal* has recommended it for topical application to old ulcers, and also in asthma.

Dr. C. J. RADEMAKER, in *Louisville Medical News*, details two cases of chronic pneumonia, and one of valvular lesions and chronic bronchitis, which were promptly relieved by Grindelia.

The EDITOR has employed it successfully in two cases of asthma, one being complicated with heart disease. Relief was rapid, and has been permanent.

J. H. RICHARDSON, a victim of hay asthma, has used it finding complete relief from his distressing symptoms by so doing.

Dr. CLELAND has used it with good success in two cases of pneumonia, and one of dropsy.

Dr. RICHARDSON, in the *Louisville Med. News*, has employed it in one case of hereditary asthma, and in a number of cases of the spasmodic variety, and in each case successfully.

Dr. W. HOPE DAVIS, in *Ec. Med. Jour.*, has used the remedy locally in gonorrhœa, conjunctivitis, ulcers, &c., with benefit in each case.

Preparations.

Fluid Extract—Dose, ½ to one fluid drachm.
Compound Fluid Extract { Grindelia R. / Rhei / Senna } Dose, from one to two fluid drachms.
Solid Extract—Dose, six to twelve grains.
Sugar-coated Pills—Each pill contains 3 grs. of the Extract.
Elixir Grindelia Aromatic—Dose, one tablespoonful.

Administration.

To be given in asthma at short intervals during the spasms, and after relief every three hours. On account of its disagreeable taste Grindelia should be combined with syrup, or with Elixir Licorice Aromatic—an excellent vehicle for the purpose.

FUCUS VESICULOSUS.

Botanical Name, ***Fucus Vesiculosus.*** **Habitat,** ***The sea.***
Local or Common Names, ***Sea wrack, Bladder wrack.*** **Medicinal Part,** ***The plant.***

This remedy has been mentioned as a cure for Obesity. We have not given the remedy a trial, but have seen several notices, recently, in medical journals, of its efficacy in these cases.

The following letter from CHAS. W. MANKER, M. D., of Shenandoah, Iowa, has been handed us for publication:

SHENANDOAH, Iowa, December 27th, 1876.

MESSRS. PARKE, DAVIS & CO., DETROIT, MICH.

Please send to my address, as above, three pounds more of your Fluid Extract Fucus Vesiculosus. I have given the pound you sent some time ago, to a very corpulent lady who was suffering from a suppression of the menses. After she had taken the medicine for two or three days, her menses started up again and her health commenced improving while at the same time her flesh began to diminish until, at the present, the diminution is perceptible to the most casual observer; while, to use her own words, she says: "I feel better than I have for two years."

Please send the medicine immediately as the first bottle is nearly exhausted. In connection with the medicine I have given directions also in regard to diet, etc.

We have received the following letter from Dr. MANKER in reference to the case mentioned in his letter of Dec. 27th, 1876. We shall be very glad to receive the report of the case *in full* when the Doctor can so report it to us.

SHENANDOAH, Iowa, February 26th, 1877.

MESSRS. PARKE, DAVIS & CO.

Please send to my address by express one-half doz. bottles (lb.) of your fluid extract Fucus Vesiculosus. The case upon whom I have been using the medicine is doing *remarkably well.* Since beginning to use the medicine—having now used four bottles—she has lost 40 pounds of flesh and has gained in health beyond my most sanguine expectations. Before she began to use the medicine she had been troubled for several years with menstrual disorders; but since taking the first pound of the fluid extract, she has not had the *slightest* irregularity. In fact, the medicine has apparently regulated the functions of every organ in the body.

I am keeping a record of the case and after she has used a few more bottles will, if you desire it, make a full report of the case, giving name and address of patient.

Please send the medicine as soon as possible and oblige

Yours very truly,

CHAS. W. MANKER, M. D.

Preparations.

Fluid Extract—Dose, one-half to one fluid drachm.
Solid Extract—Dose, eight to fifteen grains.
Sugar-coated Pills—Each pill contains three grains of the Extract.

Administration.

The above doses may be taken three times a day in the beginning of the treatment, and increased gradually to half a fluid ounce—a quantity which will be borne in most cases without any derangement of the stomach. To obtain any marked results from this remedy, it must be used patiently for a term of weeks.

DAMIANA.

Botanical Name, ***Turnera Aphrodisiaca.*** **Habitat,** ***Mexico.***
Local or Common Name, ***Damiana.*** **Medicinal Parts,** ***The leaves and flowers.***

SUMMARY FROM OUR LAST ISSUE.—The EDITOR employed it successfully in a case of a young man that had lost the power of erection. No particular cause for its absence could be assigned. Drachm doses of the fluid extract were given, and in a short time complete power was regained. Various remedies reported to have been successful in this class of cases had been fruitlessly tried before this one (Damiana) had been employed.

Dr. MURRAY, in *Med. Record*, details the case of a lady, aged 24, married some three years, had loss of sexual desire, owing, as she alleged, to hysterical convulsions. Damiana was given in two-drachm doses, three times a day, for a month, and then an ounce and a half in divided doses the ensuing two months. During the third month the "appetite" was partially restored. Her other concomitant symptoms were much bettered; menstruation becoming regular and her *embonpoint* being restored. In a man, aged 42, where exposure of undue length in a Russian bath had resulted in impotence; after some three months' use of the Damiana he was nearly cured. In another case a man aged 28, where impotence resulted from excessive sexual indulgence, a two months' course of Damiana relieved the symptoms. In another, a clerk, aged 34, where the desire and power of coition were lost, the remedy, in four drachm doses, three times a day, effected a cure in six weeks. A relapse occured, which was remedied

by another resort to the Damiana. In a fifth case, a lawyer, where syphilis seemed to have been the first cause of inducing "premature decay," the Damiana, though not curing the patient, still greatly benefitted him. This was an inveterate case, as he had tried almost everything else before resorting to the Damiana. He was still continuing the treatment in hope of a final cure.

Dr. VAN ARNURM, in the *Virg. Med. Monthly*, details a case of a man, aged 56, who was sexually decrepit, not having had an erection in over three years. Here the fluid extract, in two-drachm doses, every four hours, in three weeks time cured the old gentleman of his impotency.

Dr. MEYERS, of Philadelphia, writes that he has given the remedy extensive trial in partial impotency and sexual debility, and that its success is universal. He pronounces it the only remedy that has in his hands produced a successful result in all cases.

We are in receipt of numerous statements aversing the successful treatment of this kind of cases—sexual debility, or partial impotence—from our correspondents. It would seem, then, that the remedy has proven itself reliable for this class of cases where nux vomica, phosphorus, electricity, etc., has heretofore been our line of treatment. That these are useful adjuvants to the Damiana treatment, we doubt not; yet Damiana has oftentimes proven successful where these had failed. We think, from this, that it deserves a rank in our armamentarium as an aphrodisiac of no little virtue.

Preparations.

Fluid Extract—Dose, one-half to one fluid drachm.
Solid Extract—Dose, seven to ten grains.
Sugar-coated Pills—Each pill contains three grains of the Extract.
Elixir—Dose, one to two fluid drachms.

Administration.

To be given ordinarily from three to four times a day. Should be combined with aromatics to cover the disagreeable taste, when the fluid extract is used.

WARBURG'S FEVER TINCTURE.

It must be about twenty-five years since WARBURG'S Tincture was brought into wide repute in England. In the *Medical Times and Gazette* of June 28th, 1851, page 702, appears a letter from Dr. Warburg himself, in which he claims to have discovered, "among the abundant vegetation of the tropical lowlands," a febrifuge more potent than quinine, which he had used in the pernicious fevers of Guiana with great success, and which had received the official sanction of the Austrian Government. A large shop in King William street, Strand, was set up for the tincture at a most exorbitant price. It was strongly recommended by the late Dr. Babington, both as a febrifuge in ague and in malarious neuralgia, and as a tonic in common debility. The tincture received the approbation of many Army and Indian surgeons, and amongst friends of our own we have heard it spoken of for years as a most efficacious remedy in the worst kinds of tropical fever. One surgeon-major avers that it dispelled a severe attack of fever, but caused perspiration so profuse and exhausting that his skin has never acted since. Another Indian friend some time ago described it as efficient, but exhausting through perspiration. It is true that (as stated in the *Medical Times and Gazette*, January 24, 1857, page 90) some members of the Army Medical Department saw nothing in it superior to quinine with aromatics and spirits-and-water; still, Warburg's Tincture attained a very wide reputation, and the facts detailed by Professor Maclean show that it deserves a respectful trial in the class of cases it is intended for.

Why it has not been more generally tried, and its merits impartially estimated, is obvious enough. In the first place, its composition was kept secret; and there is a well-founded prejudice against the whole class of nostrums. Then the author declared that he had discovered a febrifuge superior to quinine; and whilst some physicians were racking to guess what drug could possess such febrifuge and sudorific powers, others were held back by the fear that there might be some powerful drug of the aconite or veratrum genus, which might be dangerous in full doses. This fear was enhanced by the fact that, as the preparation was secret, so there could be no guarantee for uniformity of composition, as there would be if it was made by Squire or Savory, or at Apothecaries Hall. That this was no visionary fear is shown by the fact that there are at least three different kinds of Warburg's Tincture on sale now in London. Some of it is said to be made by Mrs. Warburg; and some samples contain no quinine, which is the leading ingredient in the genuine articles (this, we are told, is procured at Colebrooke-row, Islington). Then it seems that Dr. Warburg is a very religious man, and in great favor with a highly respectable religious party of the so-called "evangelical" order; and it is a fact that clergymen of this school have used all their influence to get the tincture well used in the public service and in private practice. For an example we may turn back to the *Medical Times and Gazette*, January 24, 1857, where it will be seen how Dr. Crawford, the eminent physician to the

Winchester Hospital, was bullied by a neighboring parson because he refused to try this drug in typhoid fever. No one accustomed to weigh testimony would give much for the opinion of an enthusiastic clergyman on a secret remedy belonging to a devotee.

Well, time has brought about a revelation of the composition of the tincture.

It had been the subject of many analyses; quinine had been detected as a constant ingredient, aloes, rhubarb, and zedoary likewise; still it was suspected that there might be bebeerine, or some vegetable febrifuge and sudorific for which no test was known. But now it is shown that the tincture does not contain any new febrifuge, as the owner rashly (for a pious man) allowed himself to say in 1851, but that the febrifuge *is* quinine, aided by other remedies. The other ingredients, so far from belonging to the swamps of the tropics, come from the dismal regions of ancient pharmacy.

The thing is a curious specimen of poly-pharmacy, whether the ingredients be merely a "farrago devised for the purpose of mystification" or be really the result of reflection or experiment. Each bottle contains about nine grains of quinine; three purgative ingredients (viz., about ten or eleven grains of aloes, half that quantity of rhubarb, and one grain of larch agaric); and, thirdly, in each bottle the essence of twenty-five grains of heterogeneous aromatic stimulant—myrrh, zedoary, cubebs, angelica, saffron, fennel, elecampane, enriched with a good dose of the *Confectio Damocratis*, an old Mithridatic farrago containing about fifty gums, balsams, spices and aromatics.

Such is Warburg's Tincture, which, thanks to Professor Maclean, is now likely to receive a thorough trial; more especially to determine what is the share taken by the chief ingredients in enhancing the febrifuge qualities of quinine—a matter of deep importance to fever-stricken persons and fever-treating physicians.—*London Medical Times.*

DR. WARBURG'S TINCTURE.

In *The Lancet* of Nov. 13, Prof. W. C. Maclean, of Netley, England, gives the formula for the preparation of this remedy, and adduces considerable proof of its efficacy in malarial fevers. Until recently this has been, for many years, a secret remedy, but, acting on the advice of his friends, Dr. Warburg confided the formula to Professor Maclean, who has verified it by making thirty ounces of the tincture in the Netley laboratory. Several striking examples of the value of the remedy in the remittent fevers of India are mentioned, and Professor Maclean says further: "To the best of my knowledge Warburg's tincture was first introduced in Southern India, for use on a large scale, by the late Lieutenant-General Sir Mark Cubbon, K.C.B., Commissioner of the Mysore Province. . . . Having himself used the remedy with success, he at first placed five hundred, and subsequently one thousand, bottles of it at the disposal of the late Dr. C. J. Smith, well known as surgeon to the Mysore Commission (much exposed to malaria in the discharge of their duties), and I believe I am right when I say that none of them ever ventured into a malarious locality without being armed with a little bottle of 'Warburg.'

"I have not space at my command to say more of its use in Southern India, where it was always better known and more used than either in the Bengal or Bombay Presidencies. Many great engineering works in Southern India, carried on in 'deadly jungles,' were brought to a successful issue mainly by the protection afforded to the workmen by this medicine. Some remarkable evidence on this point was placed before the Royal Commission which inquired into the health of the Army of India, by my friend Major-General Cottin, R. E.

"I have only to add that very many eminent members of the profession in this country, among whom I may instance Sir Andrew Halliday, the late Sir James Gibson (Director-General of the Medical Departement of the Army), the late Dr. Babington, Mr. Skey, and many others, were led to use this febrifuge, and have left on record strong evidence of its value as a therapeutic agent. . . . .

"It will be seen that quinine is the most important ingredient in the formula, each ounce bottle of the formula containing nine grains and a half of the alkaloid. Its presence has been detected by every chemist who has attempted its analysis, and never doubted by any medical man of experience who has used the tincture. Many will say, 'After all, this vaunted remedy is only quinine, concealed in a farrago of inert substances for purposes of mystification.' To this my answer is, I have treated remittent fevers of every degree of severity, contracted in the jungles of the Deccan and Mysore, at the base of mountain ranges in India, on the Coromandel coast, in the pestilential highlands of the northern division of the Madras Presidency, in the malarial rivers of China, and in men brought to this hospital from the swamps of the Gold Coast, and I affirm that I have never seen quinine, when given alone, act in the manner characteristic of this tincture; and although I yield to none in my high opinion of the inestimable value of quinine, I have never seen a single dose of it given alone, to the extent of nine grains and a half, suffice to arrest an exacerbation of remittent fever, much less prevent its recurrence, while nothing is more common than to see the same quantity of the alkaloid in Warburg's tincture bring about both results." . . . .

The rules for the use of the remedy, as given by Dr. Maclean, are as follows: "One-half ounce (half of a bottle) is given alone without dilution, after the bowels have been evacuated by any convenient purgative, all drink being withheld; in three hours the other half of the bottle is administered in the same way. Soon afterwards, particularly in hot climates, profuse, but seldom exhausting, perspiration is produced; this has a strong aromatic odor, which I have often detected about the patient and his room on the following day. With this there is a rapid decline of temperature, immediate abatement of frontal headache—in a word, complete defervescence, and it seldom happens that a second bottle is required. If so, the dose must be repeated as above. In very adynamic cases, if the sweating threatens to prove exhausting, nourishment in shape of beef-tea, with the addition of Liebig's extract, and some wine or brandy of good quality, may be required."

"DR. WARBURG'S TINCTURE.

"℞ Aloes (Socotr.) libram,	Rad. rhei (East India),
Sem. Angelicæ,	* Confect. damocratis, ana uncias quatuor;
Rad. Helenis (s. enulæ),	Croci sativi,
Sem. fœniculi,	† Cret. præparat., ana unc. duas;
Rad. gentianæ,	Rad. zedoariæ,
Pip. cubeb.,	Myrrh. elect.,
Camphoræ,	‡ Boleti laricis, ana unciam.

"The above ingredients to be digested with five hundred ounces of proof spirit in a water-bath for twelve hours; then expressed and ten ounces of disulphate of quinine added; the mixture to be replaced in the water-bath till all quinine is dissolved. The liquor, when cool, is to be filtered, and is then fit for use.

ON THE USE OF WARBURG'S TINCTURE.—Dr. BROADBENT, of St. Mary's Hospital, London, claims that he has used Warburg's tincture with great success, believing, indeed, that he has saved life by it in several instances. Its efficacy he attributes to quinine, which, though present in the small proportion of nine and a half grains to the ounce, is aided in its action by powerful aromatics. To render the tincture thoroughly efficient it should be given without dilution, at intervals of two or three hours, during which time nothing should be taken but a little beef-tea or brandy, and this only if required by the state of the patient. The applicability of the remedy is to those cases where there is no organic disease necessarily fatal, and where the local inflammation is inadequate to produce the symptoms, but the nervous system is overwhelmed by a poison, as in malignant remittents, or perhaps by pyrexia simply.—*Practitioner*, February, 1877.

* This confection, which consists of an immense variety of aromatic substances, was once officinal, and is to be found in the Ph. Lond., 1746.

† Dr. Warburg says that this ingredient was added to correct the otherwise extremely acrid taste of the tincture. Many other substances were tried, but none answered so well as prepared chalk.

‡ This is the Polyporus laricis (P. officinalis, Boletus purgans, or Larch agaric), "formerly," says Pereira, "a drastic purgative, and still kept by the herbalist."

The following article, which we copy from the *Journal of Pharmacy*, we believe will amply repay any one taking the time for its perusal. It is one of the most exhaustive articles on the solubility of sugar-coated pills that has yet been written, and one that shows familiarity of the writer with the subject on which he is writing.—*Ed.*

A WORD IN DEFENCE OF SUGAR-COATED PILLS.

BY J. B. MOORE.

The practice of sugar-coating pills has been for some time the subject of severe, and I think, unjust criticism, and it is with the view of trying to correct some of the errors which have gained currency among medical men by what has been said and written, that I have prepared this paper.

Having been constantly selling and dispensing sugar-coated pills and granules since the practice has to any extent been adopted, I claim that I am somewhat qualified by experience and close observation to judge of the advantages and disadvantages of the practice as it affects their therapeutic qualities. In all my experience in selling and dispensing, I might say many hundred pounds of sugar-coated pills, I have never heard of a single instant of complaint of their inefficiency or even tardiness of action, either from physicians or customers, which could, by any stretch of the imagination, be attributed to their saccharine investment.

The objections which have been urged against the practice of sugar-coating pills rest, I think, upon insufficient grounds, and cannot prevail with any force when the subject is properly considered in the light of practical experience. No arbitrary rule for general application can be made to govern the matter as to what pills should or should not be coated in extemporaneous dispensing. This must be left to the judgment of the physician or pharmacist, which judgment must be based upon the knowledge of the chemical nature, etc., of the ingredients composing the pills, and the circumstances under which they are to be employed. But I do contend that as a rule *almost all* pills which are to be kept more than a day or two, should be coated with something, sugar preferred when practicable, and more especially such as contain iodide of iron, or any of the various salts of iron, asafœtida, etc., or any volatile or readily oxidizable substance Very many substances are liable to change and to deteriorate by even a brief exposure to the variable hygroscopic conditions and other atmospheric influences, from which the coating *shields* them, and at the same time preserves the pill mass from that indefinite exsiccation and hardening which exposure would produce.

I think that all of the officinal pills, as well as the numerous popular pills, which the pharmacist is obliged to keep ready-made, such for instance, as the comp. cathartic, comp. rhubarb, Hooper's and Lady Webster pill, and pills of iodide and proto-carbonate of iron, quinia, etc., should, by all means, be coated.

The opponents of coated pills may say "let every pharmacist make these pills in small quantities, and renew his stock every week or ten days." But, I would ask, what is to become of the

old stock that remains on hand at each period of renewal, and which may be the bulk, and, in some instances, the entire lot; must these be discarded and thrown away, and a new lot prepared, to be treated in like manner? Yet this must be done if we wish to meet the views of some of the opponents of coated pills, or else the pharmacists must make their pills up freshly when called for, which, I can assure my brethren, would entail upon the already complicated and onerous duties of the pharmacist an amount of labor, trouble and real annoyance, which to be appreciated must be experienced. I have realized a foretaste of this by being called upon, on several occasions, to prepare single doses of comp. cathartic, Lady Webster and various other kinds of pills, by persons whose newly-formed and unfounded prejudices against sugar-coated pills made them obstinately refuse to take them.

If the practice of sugar-coating pills should be abandoned, I can assure both the medical profession and the public that they will have to use pills in a worse and more uncertain condition than they now have them in the sugar-coated form. And, unless my conceptions of human nature are very erroneous, the pill business would soon degenerate into a state of chaos and uncertainty, and the public would be served up with such a sorry set of pharmaceutical products in the shape of pills as to make them soon cry aloud for a return to the elegant and palatable sugar-coated pill, which has, for fifteen years, steadily grown into such unbounded popularity, not only with the medical profession but also with the entire public. How could they ever have attained this universal popularity *if they had been insoluble, and, if insoluble, why was it not discovered long ago by medical men, who have been daily and almost even hourly prescribing them for years.*

The use of glycerin in pill excipients is a very good thing as far as it goes, but it does not protect the pill from deterioration by exposure nor does it shield the palate from the disagreeable contact of the "bitter pill." Furthermore, its hygroscopic character might, in some instances, render it positively objectionable, and in *no* case can it supply the place of good sugar-coating in preservative qualities. It is, however, an excellent excipient to employ in making pills, when eligible, either plain or coated, and I understand that the majority of our wholesale manufacturers of sugar-coated pills use it.

The argument that some pharmacists use against sugar-coated pills is that the wholesale manufacturer shares with us a portion of our profits. This weak argument may carry weight with some who have no business to occupy their time, but pharmacists who enjoy a fair run of business can spend their time much more profitably in other departments than they can in freshly making single doses of all the various popular pills for five cents each, which is the maximum price that three out of five pharmacists could get, and I have no doubt that many would be compelled to prepare them for three cents per dose. If any pharmacist would charge ten cents per dose of comp. cathartic pills, his unemployed and, perhaps, ignorant neighbor would charge three or five cents, and thus either take his customer or compel him to "come down." For people are influenced very much now-a-days by the charm of cheapness, and especially in little matters of this kind.

The most popular pills, in my experience, are the officinal compound cathartic pills. These are in constant demand, and are most generally sold by the single dose, and, to accommodate customers, I keep them always put up in doses of three four and five pills each, of which I sell many doses every day, and for the last fifteen years have sold none in this way but what have been sugar coated, and presume that out of every fifty doses sold forty-five are in doses of only three pills each, it being very rarely that doses of four or five pills are called for, and I can scarcely recall to mind a single complaint of their inefficacy. This I consider a good test of the merits of sugar-coated pills. If the coating interfered with their solubility or activity I would most certainly have heard frequent complaints, for the public are not generally very mealy-mouthed or at all backward in telling the pharmacist of his short-comings, or of the lack of efficacy of any of his medicines. I also sell large quantities of sugar-coated Lady Webster's, compound rhubarb, podophyllin pills, etc., and I never hear complaints of their inactivity. It is pills of this character, which produce decided and sensible effects upon the system, that are the best test with reference to their solubility.

If purgative pills will dissolve, which are liable to be hurried through the alimentary canal by the increased peristaltic action produced by the smallest portion of the medical ingredient coming in contact with the mucous membrane of the bowels, how much more likely would the anodyne, alterative and other class of pills be to dissolve, which are liable to linger longer in their passage.

As a proof of the fallacy of the idea that sugar-coating diminishes or destroys the activity of pills, watch the steady and unwavering popularity of many of the proprietary pills, which are now, I believe, nearly all sugar-coated, such, for instance, as Wright's, Jayne's, Ayer's, Schenck's, Brandreth's, etc. Do you suppose for a moment, that if the coating of these pills interfered in the least with their activity, the proprietors would not soon discover the fact and at once abandon the practice. These men are shrewd and keep a steady eye upon their own interests, and offer to the great public their remedies in the most palatable and inviting forms. And if regular medical practitioners should insist upon dosing the public with uncoated, bitter pills, what would be the result? People who have hitherto been in the habit of using the various officinal and semi-officinal pills would buy and use in their stead some of the popular proprietary pills. This would be the natural sequence of the present crusade against sugar-coated pills, if successful.

Instead of abandoning the practice of sugar-coating pills I would rather encourage its more extensive adoption, and would recommend, if it could be conveniently done, the coating of all pills to conceal their taste and to protect them from atmospheric influence. If some facile and expeditious means could be devised by which the process of sugar-coating could be executed quickly, I would like to see it applied even to pills on the extemporaneous prescriptions of physicians, and thus shield the sensitive and delicate palate of the sick from the disagreeable

taste and, sometimes, repulsive odor of nauseous medicines. I might, however, offer as exceptions to this rule all pills that are to be administered in diarrhœas, dysentery, cholera morbus, cholic, etc., where immediate or the promptest action is required, and where a highly exalted state of peristaltic action exists. In such cases it is probable that a freshly-made uncoated pill might be preferable.

To many persons a pill is the most acceptable form in which medicine can be administered, while to others pill-taking is a very unpleasant task, and the idea of swallowing a pill is associated with the most unpleasant sensations, amounting, in some cases, to the utmost disgust; I have known many persons who positively could not swallow a pill. Some people always have to hold a pill in their mouths for some time, and it is only swallowed after the most strenuous efforts. This very repugnance and disgust, experienced by many persons in taking pills, and difficulty in swallowing them, has been, in many instances, I have no doubt, engendered by their being compelled to take bitter and nauseous uncoated pills, whereas had they been sugar-coated, they might never have experienced the slightest difficulty in taking pills at any time.

If regular physicians wish to render their practice unpopular with the public and encourage and foster homœopathy, let them sanction and join in the recent opposition to sugar-coated pills, and continue to discourage the employment of other elegant and palatable forms of remedies which an enlightened pharmacy offers them.

I consider opposition to sugar-coated pills an unfortunate retrograde step, and as unjustifiable and unnecessary as it is injudicious and damaging to the interests of both medicine and pharmacy. I think it should be the aim of every pharmacist, who feels a just pride in his profession, to encourage rather than to discourage the adoption and perpetuation of any practice that gives elegance to his products and that renders his preparations as agreeable to the taste and as inviting in appearance as possible. The very appearance of a medicine may invite, or it may repel and excite feelings of disgust in the mind of a patient. Physicians should feel it their duty, as it most certainly is of paramount importance to their interests, to aid and encourage Pharmacists in their efforts in this direction, by using and recommending such improved forms of remedies. I refer, of course, to legitimate and substantial improvements. I don't expect a physician to adopt and prescribe every new-fangled thing to which the pharmacist may call his attention, either personally, by circular or by sample, the real merit of which may be all in the label, the true composition being kept a profound secret and only known to the pharmacist himself, and the whole thing, perhaps, only a fraud and deception.

The more elegant in appearance and the more palatable medicines are the more popular the regular practice will become. It has unquestionably been, in a great measure, the disagreeable and repulsive doses of the regular practitioner, and the palatableness of homœopatic remedies that has given the latter practice such a foothold, and rendered it so popular among the most cultivated and refined classes of our population. It is not among the ignorant and poor that homœopathic practice has attained its greatest popularity, but it is with the more cultivated and refined, whose delicate and fastidious palates revolt at nauseous doses of regular medicine. It is this class of people who will employ that doctor who will give them pleasant remedies, even though they may not really have so much confidence in his skill, in preference to one who deals out to them nauseous draughts. To ascertain the truth of what I have said, inquire of those who employ homœopathic physicians, and I will guarantee that three out of every five persons will tell you that they were allured to the latter by their pleasant remedies. Mothers will tell you that their medicines are so nice for their children; that their little darlings take their medicines so easily. There is no coaxing and petting necessary; no throwing of their little pets on their backs and holding their noses while they pour the nauseous doses down their little throats, and then witnessing their sobs and heartrending cries, since they have employed the homœopathic doctor.

The physician who studies to please the palate of his patient, especially if it be a woman or child, does a wise thing, in that he fortifies himself in their confidence and respect to that degree that it would require some powerful adverse circumstance to destroy. Many, many times have I heard ladies say, "Oh! I do like Dr. So-and-so so much, he always prescribes such pleasant medicines." Hence, I say to the medical profession pause and reflect awhile before you fall into the fatal error of taking the backward step of opposing and discouraging the use of sugar-coated pills, which give so great a finish and so much elegance to this form of remedy.

The theory of insolubility of sugar-coated pills is, at first sight, a very plausible one, and therefore apt to be accepted by medical men as true, without their having taken the time and trouble to test its verity. And especially are such theories likely to gain credence and rapid currency when they emanate from prominent writers, or are heralded by any of the "Six Oracles" of a profession. But generally such false notions sustain but an ephemeral existence; they may for a while, like the "will-o'-the-wisp," lead the unwary astray, but they cannot long withstand the sunlight of truth and scientific practical investigation, and,

> "Like bubbles on the sea of matter borne,
> They raise, they break, and to that sea return."

When a remedy or form of remedy is placed under the ban of suspicion, as sugar-coated pills have been, since the senseless tirade against them was started, it is apt to be blamed unjustly, and failure of therapeutic activity ascribed to it, which *may be due* to the deranged condition of the system. *The usual dose of the officinal compound cathartic pill may, in the same individual, at one time produce excessive action, while at another time it may be wholly inoperative. So with quinia and other tonics*; they may at one time act with great precision, certainty and with magic power, while at another time, may be continued for weeks without any appreciable effect. This capriciousness and uncertainty of the action of medicines is a problem very difficult of solution. This lack of activity, or uncertainty in the action of a medicine may depend on some abnormal conditions of the fluids and secretions of the stomach and intestinal canal; hyperæmia

or vascular fullness of the mucous coat may retard or effectually prevent absorption, although the medicinal substance may be dissolved or digested, and in the most favorable condition for assimilation. Both the gastric and intestinal secretions are very much influenced also by the variable condition of the nervous system, even absorption or endosmotic action may, in a measure, be suspended or entirely suppressed by certain nervous conditions. This is evidenced by the almost entire suspension of digestion produced in sensitive persons by the sudden announcement of bad news or any powerfully depressing circumstance. Grief or great trouble of any kind in persons of a nervous and sensitive organization, may often produce an awful sense of weight and oppression in the gastric region after food, accompanied by depression of spirits, etc. Every nervous and dyspeptic person has, I have no doubt, experienced the truth of this.

Idiosyncracies of individuals, which may be unknown to the physician, may also dwarf the power of medicines and interfere with their physiological action and pervert their therapeutic effects. Opium, belladonna and other narcotic and anodyne remedies, when given to relieve neuralgic and other painful affections and to produce sleep, often produce effects diametrically opposite to what are expected of them. Calomel and other preparations of mercury, iodide of potassium, arsenic, the various preparations of iron, etc., are all conspicuous examples of a large class of medicines which often fail in exerting their normal therapeutic effects, which, if administered in the pill form, may be unwittingly and unjustly ascribed either to their age or to their coating. These, with many other circumstances well known to medical men, may interfere with digestion, absorption and assimilation, and conspire to render the action of medicines uncertain. Hence, to test the relative merit or activity of the various kinds of pills, it is absolutely necessary in order for the therapeutist to arrive at a just and rational conclusion, that he should take into careful consideration all the various disturbing causes which beset the action of remedies.

In consequence of the doubt and uncertainty created in the minds of physicians and pharmacists regarding the solubility of coated pills, several pharmacists instituted a series of experiments by means of artificial digestion, to test the relative solubility of the various coated and other ready-made pills of the day. With the results of their experiments the readers of this journal, I presume, are aware. But the utmost all such experiments can demonstrate is the relative solubility of the pills under treatment in the artificial mixture in which they are digested or macerated. They cannot convey any definite or even proximate idea of the relative solubility of the pills when they are submitted to the natural process of digestion as it is conducted in the human stomach and intestinal canal. The conditions under which the artificial digestion is conducted are all so entirely different from those attending the natural process as to render comparison of results *entirely out of the question*. There is absence of the genial warmth and the muscular movements of the stomach and intestinal canal, and of the disentegrating influence of the constant agitation, trituration and the attrition to which the pill is subjected in contact with the particles of food, etc., usually present in the alimentary canal, and the powerful solvent action of the various secretions not only of the stomach, but those of the mucous surface of the intestinal canal, all of which are so destructive to the integrity of the pill mass. These, we might say, are all wanting in the artificial process, and will ever render the latter, no matter how carefully conducted, nugatory and barren of even an approximation to positive or satisfactory results.[1]

The most valuable and most satisfactory experiments ever made to test the digestive power of the gastric juice, both in and out of the stomach, were those made by Dr. Beaumont upon his subject St. Martin, in whom there existed, as the result of a gun-shot wound, an opening leading directly into the stomach, three inches from the cardiac orifice. From this opening, gastric juice could be obtained and the process of digestion inspected, which afforded Dr. Beaumont unusual opportunities for experimenting. In order to show the fallacy of comparing artificial digestion with the natural process, I shall here quote from one of the experiments of Dr. Beaumont as I find it recorded in "Carpenter's Principles of Human Physiology," page 424.

A portion of meat was submitted by Dr. Beaumont to artificial digestion, under the most favorable circumstances, with gastric juice taken from the stomach of St. Martin, which required from 11½ o'clock A. M. to 9 o'clock P.M. for complete digestion, while another portion, exactly similar, was placed *in the stomach* of St. Martin at the *same time*, was at *one o'clock* P. M., found "to be completely digested and gone."

Thus, it appears that meat, when submitted to artificial digestion, even with natural gastric juice in its nascent state, taken directly from the living human subject, required eight hours (six times) longer for complete digestion than it did when submitted to the crucial test of the natural process, which demonstrates how fallacious and unreliable must ever be all experiments made by artificial digestion with artificial gastric juice.[2]

In many, if not in the majority of cases in which medicines are administered in the pill form, I believe there are actual physological advantages derived from the slow and gradual solubility of the pill mass in the stomach and intestinal canal. This not only protects the often sensitive mucous membrane of the stomach from the shock which the sudden contact of the full force of the medicine might produce, but also allows absorption to take place gradually and more thoroughly than when the pills are freshly made and liable to be completely dissolved in a few minutes. Cathartics, particularly, are extremely liable in nervous and sensitive persons to irritate and sicken the stomach, consequently medicines of this class are often given, and are

[1] Dr. Dalton, in his "Treatise on Human Physiology," page 133, says, concerning the muscular movements of the stomach, that this "continuous movement of the stomach is one which cannot be successfully imitated in experiments on artificial digestion with gastric juice in test-tubes, and consequently the process under these circumstances is never so rapid or so complete as when it takes place in the interior of the stomach."

[2] Dr. Carpenter, in commenting upon these experiments of Dr. Beaumont, page 424 ("Carpenter's Principles of Human Physiology"), remarks that this tardy action of artificial digestion "is readily accounted for, when we remember that no ordinary agitation can produce the same effects with the curious movements of the stomach, and that the continual removal from its cavity of the matter which has been already dissolved must aid the operation of the solvent on the remainder."

borne without discomfort, which, if administered in mixture or liquid form, would cause great distress and perhaps be ejected. The same is true of bi-chloride of mercury, iodide of potassium and many other substances which might be named that are of an irritant character. The truth of this is exemplified in the almost every-day experience of the physician and pharmacist. For the reasons here stated, physicians are not unfrequently in the habit of prescribing "old opium pill" in preference to those freshly made (see "Pil. Opii," U. S. D.); and it this be true in the case of opium, why should it not also be true in regard to many other medicinal substances. I believe that the fears entertained by some concerning the inefficiency and untrustworthiness of pills that are not freshly made to be more imaginary than real. I do not believe that there is any disadvantage in pills being old and hard if properly made, whether coated or plain, provided they have been properly preserved, and do not contain any ingredients liable to change or spoil by time and exposure. They may, perhaps, not dissolve quite so quickly as newly-made pills, but will dissolve more gradually and in due time, and be as complete and as thorough in effect and less liable to perturb the system. I have sold uncoated cathartic pills of different kinds, which I have kept on hand for several years, and never found them less efficient than when they were freshly made. Slow and gradual solution throughout the digestive organs favors absorption by presenting successively fresh portions of the medicinal ingredients to the mucous membrane, and thus permitting them to be absorbed, particle by particle, through the whole course of the alimentary canal without irritating or fatiguing the organs; especially is this true of all tonic and alterative pills.

It is surprising what increased power remedies sometimes acquire when presented in small but successive fresh portions at a time to the mucous surface of the stomach and intestines. It is this frequent repetition of minute doses which gives homœopathy its success when it derives any at all from medication. We often see ipecac and other emetics and nauseants, as well as purgatives, produce excessive action when given in minute doses and repeated every hour or so, whereas five times the dose might be given at once without, perhaps, producing any sensible effect.[1]

It would seem that many pharmacists labor under the erroneous impression that digestion is conducted alone in the stomach, but this is a great mistake.[2]

Gastric digestion is only the first stage or commencement of the process. After a pill has been subjected to the solvent action and digestive power of the fluids of the stomach and the rough handling it receives from the muscular movements of that organ,[3] if it is not dissolved, it then passes to the duodenum, where it meet with the secretions of the pancreas and liver and those of the villous coat of the intestinal canal, which, together with the gastric and salivary fluids which have passed the pylorus from the stomach intermingled with the chyme, forms a combination of greater digestive and solvent power than that of the stomach itself.[4]

From the duodenum it passes on through the remainder of the small intestines, and through this long and turbulent route of about twenty-five feet of intestinal tube it is subjected to the warmth and solvent action of the secretions and fluids of the canal and the attrition and peristaltic movement of the bowels, which promotes rapid solution and disintegration.[5]

From the small intestine the pill passes into the large intestines, and even here it is confronted with fluids destructive to its entirety; for it is the opinion of some physiologists (see "Kirk's and Paget's Physiology," page 199) that the cæcum also secretes an acid fluid similar to the gastric juice, capable of digesting substances which have eluded or resisted the action of the stomach and passed unchanged through the small intestines. If digestion and absorption did not take place to some extent in the lower portion of the intestinal canal, what would become of the excremental matter that would accumulate in the lower bowels of persons who suffer from obstinate and protracted constipation, who are sometime for weeks or even months at a time without a passage, yet who diurnally take their usual quantity of food. The average quantity of excrementitious matter daily ejected by an adult is estimated by physiologists at from four to six ounces. There must certainly be some provision made by nature in the lower portions of

[1] Dr. Dunglison, in his "Therapeutics and Materia Medica," vol. 1, page 168, well elucidates this fact by a case which he says the late Dr. James Gregory, of Edinburgh, was in the habit of relating in his lectures: "A boy was directed to take an ounce of Epsom salt, but having a strong objection to the taste of the cathartic, resolved to form it into pills with crumb of bread. On making the pills of an appropriate size, he found they amounted to three hundred and sixty, a number so near to that of the days of the year that he determined to make it correspond entirely. Accordingly he divided them into three hundred and sixty-five portions, and took them all, one after the other. The effect was extraordinary. The most violent hypercatharsis was induced, so as to endanger his life. This was owing, probably, to the gradual and successive breaking down of the pills in the canal, so that particle after particle came in contact with the mucous membrane."

[2] Dr. Reese, in his "Analysis of Physiology," page 172, says: "A more complete digestion, in fact, takes place in the upper portion of the intestines than in the stomach itself."

[3] Dr. Reese, *loc. cit.*, page 167, says: "When the food has reached the stomach it is subjected to a peculiar peristaltic movement. This is produced by the contraction and relaxation of the various fasciculi of the muscular coat; it causes a complete revolution of the contents, in every direction, and a consequent thorough trituration."

[4] "The fluid of the small intestines, which is compounded by the intermixture of the biliary and pancreatic secretions with the salivary and gastric fluids, and with the secretions of the intestinal glandulæ, appears to possess the very peculiar power of dissolving or of reducing to an absorbable condition alimentary substances of every class, thus possessing more of the character of a 'universal solvent' than either of these secretions has in its separate state." ["Carpenter's Principles of Human Physiology," page 432.]

In reference to the digestive power of the fluids of the intestines, Dr. Dalton [*loc. cit.*, page 145] says: "Although the separate actions of these digestive fluids, however, commence at different parts of the alimentary canal, they afterward go on simultaneously in the small intestines; and the changes which took place here, and which constitute the process of intestinal digestion, form at the same time one of the most complicated and one of the most important parts of the whole digestive function."

[5] "The process of digestion and conversion are probably continued during the entire transit of the alimentary matter along the small intestine, and at the same time the products of that conversion are gradually being withdrawn by absorbent action." [Carpenter, *loc. cit.*, pag. 433.]

the intestines for the solution, or reduction to an absorbable condition of the large amount of solid matter which would accumulate in protracted cases of torpid bowels. Of course, as is well known, about three-fourths of this matter is of an aqueous character, which may be gradually absorbed by long contact with the mucous coat of the bowels; but there must still remain, in some cases, a large bulk of solid and extremely indigestible matter, which must undergo a thorough transformation before it can be taken up by the absorbents, and which, if it should remain would produce great discomfort or even endanger life. This labor must be performed either by the fluids which pass down intermingled with the solid matter, or else by the secretions of that portion of the intestines themselves.

But even should this not be the case and such a fluid not be present, the pill, while sojourning here and in the remaining portion of the bowels, will nevertheless be subjected to the softening and solvent action of the warmth and moisture of the parts, and the disentegrating effects of peristaltic action, while at the same time absorption will take place, even from this remote region, and the medicinal ingredients will exert their therapeutic effects in a measure, if not to their full extent, because whenever a medicinal substance comes in contact with a mucous membrane or an absorbing surface, under favorable conditions, it will be taken up and exert its medicinal effects. This is illustrated by the effect of medicines and alimentary substances when administered by rectum, or when medicinal substances are administered by the vagina, or when applied to a denuded surface or injected into the veins or under the skin, or when absorbed from the mucous membrane of the air passages.

Thus we see that a pill finds no quiescent state or haven of rest from the moment it enters the cardiac orifice until it passes the exit gate of the rectum; and it would seem to me that a pill, whether coated or uncoated, new or old, would have to be insoluble indeed to be able to stand the thorough trituration that it receives in the stomach and then to pass unchanged through the entire intestinal canal, a distance of about thirty-five feet. Therefore I would say that a pill that could run the gauntlet of such an ordeal deserves to escape. And what though a refractory pill should occassionally be found capable of such a feat, and "live to purge another day," this would not warrant us in unqualifiedly denouncing the practice of sugar-coating pills, a practice which confers such a blessing upon the invalid. Because we discern a spot upon the sun's disc, that is no reason why we should at once extinguish that glorious luminary.

Since the hue and cry against sugar-coated pills has been started I have heard a great many outlandish stories told concerning them by medical men. A friend of mine in one of our wholesale drug houses informed me some time ago of a physician in Chester county, Pa., who told him that he had in his possession a half-pint bottle filled with sugar-coated pills, which he had garnered, that had passed through the alimentary canals of his patients unchanged. Another physician, residing in this city, informed a friend of mine that he had found handfuls of sugar-coated pills that had passed from his patients unscathed. Now, I don't like to question the veracity of these gentlemen, but I am constrained to say that I don't believe these stories.

"Lest men suspect your tale untrue,
Keep probability in view."

I think that it would be safe in offering five dollars apiece for all the sugar-coated pills made by any of our reputable manufacturers that can be obtained and presented *under oath* as having passed the alimentary canal undissolved under ordinary conditions of that organ. I doubt very much if enough could be collected within a year in the United States to fill a half-ounce bottle. I really think that these over-zealous relic-hunters have mistaken cherry-stones for sugar-coated pills.

When the mucous coat of the stomach and bowels are in such an excited and irritable condition as is sometimes the case in diarrhœa, dysentery, cholera morbus, etc., peristaltic action may be so excessive as to hasten the passage of substances to such a gait that time might not be given for solution or perfect digestion to take place. Under such circumstances *it might be possible* for a pill, whether coated or uncoated, new or old, to pass through the alimentary canal undissolved. Under such conditions, even portions of food may pass whole or unchanged, which under ordinary circumstances would be very digestible. But these are exceptionable cases, and even in such cases, I believe particles of *very digestible* food would be more likely to pass undigested than would medicinal substances, because such remedies as would be administered in such cases would be likely to, temporarily at least, control and restrain inordinate peristaltic action, so as to allow a pill to be dissolved when portions of food might pass unchanged.

I have, in another part of this paper, said that in the case of pills that were to be administered in diarrhœa, etc., or that were desired to act promptly, there might be some advantage in their being freshly made and uncoated, but I question very much whether there is actually any advantage accruing therefrom even in such cases. Observation and experience in the use of this form of medication would seem to indicate that this was *not* the case. During the whole course of my early experience in pharmacy, I had occasion to make large quantities of a pill composed of opium, camphor and capsicum. This pill with many physicians was extremely popular. It was considered almost a specific in diarrhœa, dysentery, cholera morbus, and during the prevalence of epidemic cholera it was used by a great number of physicians of my acquaintance with the greatest success, in fact it was their sheet-anchor of treatment. These pills we used to make up in quantities of thousands at a time. This was almost before sugar-coating was thought of, or at least before it was introduced to any extent.

The excipient employed in making these pills was gum Arabic and water, the most insoluble excipient that could be employed, and these pills were often kept on hand for months before they were used, yet no complaint was ever heard of their tardiness of action or inefficiency. One physician of my acquaintance, the late Dr. Wm. S. Latta, of near Parksburg, Pa., employed these pills very extensively in his practice. I used to prepare them for him in lots from five hundred to a thousand at a time, which, under ordinary circumstances, would last him for a

year or longer. Yet he never found these pills to lose their virtues by the petrifying hand of time, although they were used in diseases in which the alimentary canal is in the most sensitive and irritable state, and in the most unfavorable condition for solution, absorption and assimilation. This is not only my experience in the pill trade, but I have no doubt it has been the experience of thousands of other pharmacists who have had a long and large experience, and who have been observing.

This is the best kind of evidence of the power of the stomach and intestinal canal to dissolve pills that have been long kept and that are *uncoated*, while it speaks in thunder-tones in favor of pills that are *coated; because if pills are found to be soluble and active that have been kept for years uncoated, how much more soluble would they be when carefully made and properly sugar-coated.* Besides, whoever heard of frequent complaints, by physicians or any one else, of the insolubility or inefficiency of pills, either coated or uncoated, until this terrible "bug-a-boo" of insolubility of sugar-coated pills put in an appearance, notwithstanding millions of boxes of the various proprietary pills have been sold for years and years, and thousands of pounds of officinal and semi-officinal pills, saying nothing about the mongrel varieties dispensed over the counters of pharmacists and from the offices of physicians all over the country. Many of these pills, both proprietary and those of regular pharmacy, had been kept on hand for years until, you might say, they have almost grown grey with age before they were used, yet were found to have retained their pristine and youthful activity and energy, and no sepulchral voice was ever heard, or if at all, very rarely against their efficiency.

It is by the practical experience and close observation in the sale and use of medicines of this kind that this question or problem of solubility or insolubility can be settled, and it is only upon this kind of testimony that any man, either physician or pharmacist, can base an intelligent judgment, and not upon hypothesis or the idle speculations of theorists, whose opinions are often like "airy nothings."

Even the coating of pills with silver and gold leaf, which was at one time so much in vogue, has been found by experience not to interfere with their solubility. Prof. Parrish, in his "Pharmacy," page 802, 1864, remarks, "Since the issue of the former edition of this work, the ancient practice of coating pills with silver and gold leaf has been revived." Same volume, page 803, he also says, "The former belief that a coating with metallic leaf, is sufficient to hide the taste and smell of the pills, would interfere with their solubility, has been very much modified by recent experience."

We want for testing the relative solubility of sugar-coated pills or of any other kind of pills in the alimentary canal, not test-tubes, tumblers or other utensils and artificial gastric juice, but what we want for this important purpose are living human alimentary canals. The pill which may be most solvable in artificial mixtures might be the last to return to its elementary condition in the gastric and intestinal fluids.

This question is strictly within the domain of the careful and intelligent therapeutist and the close observer of the action of medicines upon the human organism; and the hospital, dispensary and the private practice of the physician are fields pregnant with opportunities for experiment.

The action of the various secretions of the alimentary canal, and the influences that are at work in that living crucible, are in a great measure shrouded in doubt, and in the present state of science inscrutable to man. We can only imperfectly judge of their action by certain phenomena and results.

Besides, the materials of which pills are usually composed, will much more quickly dissolve or liquify in the fluids of the alimentary canal than will ordinary alimentary substances. In the former there is not that obstinate cohesion to overcome in order to reduce to an absorbable condition, that would be presented by the muscular fibre and vegetable tissue and other tough and insoluble parts of alimentary substances. Almost any pill-coating or pill-mass will dissolve and readily disintegrate by simple maceration for a few hours in water at the temperature of 100°, with occasional agitation, whereas you might soak a piece of beef-steak or cabbage for some time before you could reduce it to a state of fluidity.

There is still another very important circumstance in the history of the digestive process, which seems to have been overlooked, or its importance not properly estimated in the consideration of this subject, and that is the length of time a pill, under ordinary circumstances, would be likely to be subjected to the solvent and digestive powers of the fluids of the alimentary canal in its passage. It is estimated by physiologists that alimentary substances average from one to two days in their transit along the intestinal tube, and from two to five hours or longer are spent in the stomach. This slow passage and long maceration in the corroding juices of the canal must insure, beyond peradventure, the thorough solution of any pill-coating or pill-mass, unless of adamantine hardness. If hyperæsthesia of the intestinal tube or other morbid condition should exist which may accelerate peristaltic movement, of course a more rapid transit would be likely to take place. But again, there are frequently inactive and comparatively stagnant conditions of the intestinal canal, in which a pill may loiter for days or even longer.

The great length of the intestinal tube, which is about six times the length of the entire body, with its numerous convolutions and varied secretions, is wisely provided by nature to adapt it to the work of a thorough digestion and absorption of indigestible alimentary matters, etc.

Upon inquiry I find that the materials most generally employed by sugar-coated pill manufacturers for making their coating, is sugar and starch, only a few add a trace of gum Arabic. It must therefore be evident to every intelligent pharmacist or other persons having a knowledge of the solvent power of aqueous fluids, when maintained at the temperature of 100°, over any mass composed of such materials, that even the simplest maceration of a pill in the juices

of the intestinal canal, for from 24 to 48 hours, under the influence of the constant agitation of peristaltic action, leaving out of the question gastric digestion, would be sufficient to dissolve any pill-coating made of the above materials, even if the intestinal fluids possessed no greater solvent power than simple water.

Since the opposition to sugar-coated pills started, several manufacturers of gelatin-coated and "compressed" pills have loomed into prominence. The chief virtue upon which these manufacturers base their superiority over sugar-coated pills, and ask for them a preference, is their asserted greater solubility, and it is this assumed merit alone which, with judicious advertising, has secured them a passport to a certain amount of favor among physicians.

Now, I am for progress always, and the profession will find me an ever zealous advocate of any change in the form of any remedy that will augment its therapeutic virtues or render its administration more easy, and which carries with it real improvement; but to introduce a change or multiply forms simply for the sake of novelty, or to satisfy whims or caprice, which will at the same time complicate the business of the pharmacist and lead to confusion, such innovations I shall ever oppose to the extent of my feeble influence.

The "compressed" and "gelatin-coated" pills, in my opinion, are simply novelties, and *very expensive ones at that*, especially the former. I have never heard complaints urged against the oval shape of the gelatin-coated pills, which, however, I deem objectionable, as rendering them difficult to swallow, but I have heard customers complain of the flat form of the compressed pills, rendering them more difficult to swallow than that of the round sugar-coated pills. Where there is one person that could more readily swallow a flat or oval body, there are fifty who would prefer to swallow a round one.

As the compressed or gelatin-coated pills possess no real therapeutic superiority, nor any advantages in point of ease of administration over the ordinary sugar-coated pills, I consider their introduction seriously objectionable. Such innovations only tend to entail greater trouble and annoyance upon both the physician and pharmacist, complicate the business of the latter and led to confusion with the former, without conferring compensatory advantages upon either. To keep a full stock of all the varieties of compressed and coated pills would involve an amount of capital almost equal to that required to furnish the ordinary stock of a small retail drug store.

If physicians and pharmacists continue to give their sanction and encouragement to the popularization of every new-fangled novelty, in the shape of anybody's coated pills, there is no telling where this thing will end. They will be likely to increase and multiply *at infinitum*, until the coated-pill business will become as great a nuisance and as troublesome to the pharmacist, if not more so, than the "Elixir" business was, which some members of our profession complained so bitterly of.

If these pills were prescribed by the generic titles of "compressed" or "gelatine-coated," without the name of any particular manufacturer being specified, then the trouble and annoyance to the pharmacist would not be so great. Many of our wholesale manufacturers of pharmaceutical products have recently engaged in the manufacture of both compressed and gelatin-coated pills, and as many more, I have no doubt, will soon enter these "fresh fields and pastures new," and if the thing takes, there is no telling how many more will get at it. And all, of course, anxious to introduce their particular make of pills, will flood the entire domain of both physic and pharmacy with circulars to induce physicians to prescribe and pharmacists to buy their products. So, as I have said, if we are to keep a full assortment of everybody's make of compressed and gelatin-coated pills, in addition to our regular and staple sugar-coated stock, what are we to do? It will soon be necessary for us to not only increase our capital stock, but also to enlarge our places of business to afford increased accommodations for their storage.

I have, in common, no doubt, with many others of my brethren, already experienced a foretaste of the inconvenience and trouble that the advent of these new varieties of pills are likely to cause. Every once in a while we receive a prescription for somebody's compressed or gelatin-coated pills, which perhaps are for some impecunious individual who possibly has hardly the means to buy bread, and we are compelled to send out to some remote pharmacist, whose peculiar location gives him sufficient demand for these sporadic pharmacals to warrant him keeping a stock of them on hand. We there procure these pills, and pay so high a price for them that we are obliged, in the majority of cases, to charge almost the same price for them without any compensation for our trouble and annoyance. For if we were to charge a reasonable profit, our customer would accuse us of extortion, while the physician would come in for his share of censure for prescribing such high-priced remedies. Thus, the price alone I consider a very serious objection to these pills.

The gelatin-coated pills, although somewhat higher priced than the sugar-coated, yet are much more reasonable than the compressed.

Now, if there was any earthly advantage therapeutically in these pills over the sugar-coated ones, there would then be something to justify the physician in prescribing them; but it will require some stronger evidence to convince me of their superiority than the mere asseveration of their patentees or manufacturers. We want, in my opinion, no better pill than the sugar-coated, when it is properly made. Sugar-coating, when well done, is the very *acme* of elegance of all forms of coating.

So far as the sugar-coating of pills is concerned, I believe that all of our more reputable manufacturers vie with each other in the beauty, elegance and perfection of their coating, and also pay due regard to the solubility. This they would do for the *sake of their own reputations and for the popularity of their products.* There are, I have no doubt, some who might not be over-conscientious about substituting cinchonia for quinia or podophyllin for extract of jalap, in the pill mass, and who would not deign to spoil the coating for the sake of saving a few cents. This would be too like "spoiling the ship for a shilling's worth of tar."

I have no fear myself of the solubility of pills in the alimentary canal, whether they be coated with sugar or gelatin or compressed. What I would dread more than anything else in ready-made pills would be the deception and fraud which might be practised by dishonest manufacturers in the selection and proportionment of the ingredients. Although, I must confess, that I have much faith in the probity and conscientiousness of most manufacturers, and believe the sugar-coated pills of our leading houses to be about as reliable as any other class of pharmaceuticals which we buy ready-made, and which we have no means of ascertaining the quality, of by convenient and reliable tests. We, of course, with sugar-coated pills, as with extracts, fluid extracts, powders, etc., have to rely upon the honesty of the manufacturers for their purity and proper proportions of the materials used in their fabrication, and the care and skill employed in their production.

Before quitting this subject, it may not be improper for me to address a word or offer a few suggestions to the manufacturers of sugar-coated pills, although what I may offer may not be new to many.

In coating pills of asafœtida, iodide and protocarbonate of iron, or those containing camphor, myrrh, phosphorus or any of the volatile oils, or in fact, any volatile or readily oxidizable substance, the greatest care should be exercised to avoid exposure to too high a temperature. The desiccation should, I think, be conducted in a dry atmosphere, at the ordinary temperature. This would involve a longer exposure, but it would entail less risk of partial decomposition or volatilization of the active ingredients. And in all pills containing such or similar substances, would it not be well to first give them a coat of tolu before that of sugar is applied? Would not such a plan aid very greatly in preserving such pills from change or loss of activity when long kept? With the fear of that awful "bug-bear" of insolubity before their eyes, sugar-coated pill manufacturers often commit the error of coating their pills before they are properly dried. In consequence of this, the moisture often soaks through the coating, the pills become discolored, often taste of the ingredients and are unfit for sale. All pills should of course be dried with care, preparatory to coating, but unless they contain any volatile or oxizidable substances, rapid drying to the proper condition for coating can do them no possible injury.

The object of this paper is to show the injustice and to demonstrate the utter fallacy of the tirade against sugar-coated pills.

In order to convince my readers of the sincerity of what I have said, and to attest my faith in the powers of the *human* alimentary canal to dissolve any properly made sugar-coated pill, I make the following offer: I will present to any chemist, physician or pharmacist in the United States, as a reward of merit, the sum of *twenty-five dollars*, who will manufacture a pill-coating from the same kind of materials, and in the same proportions, and by the same process usually adopted by our best manufacturers of sugar-coated pills, which will render a sixth, quarter and half grain morphia pill, or the officinal compound cathartic pill, insoluble and inactive, and fail of producing their characteristic therapeutic effects when properly administered, under any physological conditions of the system or alimentary canal in which these same kinds of pills *will* display their usual medicinal effects when *freshly* made and uncoated.

I wish it to be understood that in writing this paper I have "no friends to reward nor enemies to punish"; I merely write in the interest of science, my profession and for the welfare of the sick. In writing upon such an important subject, I feel it incumbent upon me, as it should be upon any one, to speak the truth and give expression to my honest convictions, "hew to the line, let the chips fly where they will."

I have given this subject much thought and careful consideration, and have treated it in this minute and thorough, and, I hope, impartial manner which its importance demands; and should I have, inadvertently, made any erroneous statement, I shall be most happy to have any physician or pharmacist who may be more enlightened upon the subject than myself, to correct me.

Philadelphia, Pa., February, 1877.

ŒNOTHERA BIENNIS.

The following is a condensed summary from an article by Prof. N. S. Davis, of Chicago, in the *American Practitioner* for January 1877. The professor has employed this remedy successfully in more than twenty cases of asthma, associated with gastric irritability. He says that from his own clinical observations he regards it as a mild, but efficient, sedative to nervous sensibility, acting more especially upon the pneumogastric nerve. Hence its adaptation to the treatment of such cases of respiratory or gastric trouble as involve a morbid sensitiveness either in the laryngeal, pulmonary or gastric bronches of that nerve, whether of an acute or chronic character. It is certainly worthy of further trial in the treatment of such affections as *whooping-cough, spasmodic asthma*, and certain morbidly sensitive conditions of the stomach, interfering with a healthy digestion. It may be used in the form of an infusion, or fluid extract. The dose of the former being from one to two tablespoonful; of the latter, twenty to thirty minims, every three, four or six hours, as the case may require.

NOTES AND QUERIES.

DR. J.,—Indianapolis.

The best vehicle for the administration of Fl. Ext. Grindelia Robusta, for the purpose of disguising its disagreeable flavor, is *Elixir Licorice Aromatic.* This preparation is equally efficacious for the exhibition of other bad tasting fluid extracts and tinctures, as well as salts.

J. H. K., Chicago.

Fluid Extracts precipitate when combined in prescriptions with other preparations of weaker alcoholic strength, because of the large proportion of medicinal principles (resins, oils, alkaloids, etc.) held in solution by the strong menstruum of the fluid [extracts, which are precipitated when the solubility is decreased by mixture with the weaker preparations. Resinous fluid extracts may be combined with syrups, making clear preparations by the use of liq. potass. We suggest the following as a formula for Syrup Yerba Santa:

℞ Fluid Extract Yerba Santa, 2 fluid drachms.
Liquor Potass, ½ fluid drachm.
Simple Syrup, 2 fluid ounces.

Rub the fluid extract and liquor potass together in a mortar, and gradually add the syrup.

A DOCTOR writes us asking for a pleasant way for the administration of salicylic acid.

In the sugar-coated pill form, elixir, or lozenge it would be as acceptable to the stomach as any form in which it could be given. In the lozenge it is triturated with so much sugar as to render it as little irritating to the stomach as possible, being in the proportion of from 1-10 to 1-20 of the whole lozenge, by weight.

Parke, Davis & Co.'s

SUBSTITUTES FOR QUININE,

FOR THE TREATMENT OF MALARIAL DISEASES.

Dr. Warburg's Tincture.
A celebrated remedy for malarial fevers, used with marked success in Southern India by the leading surgeons of the British army. Where quinine proved ineffectual, this preparation would frequently be successful.

Fluid Extract Eucalyptus Globulus.
This remedy has earned a world-wide reputation as a febrifuge, and will be found, by impartial trial, a substitute for quinine in many complaints. Since we first introduced this drug to the profession in the form of the Fluid Extract, we have had numerous reports of its efficacy in malarial diseases. It is also of marked value in bronchitis, and as a wash for fetid ulcers, purulent catarrhal affections of the urethra and vagina, etc.

Fluid Extract Gelsemium—(prepared from the green root.)
This remedy is considered by many practitioners to be one of the most valuable in our list of indigenous plants for the treatment of all fevers, except the congestive form. Possessing great influence over the nervous system, it quickly overcomes nervous irritability, promoting perspiration, and rest. Combined with fluid ext. Eucalyptus Globulus in the treatment of intermittents, it will be found effectual in many cases both as a remedy and prophylactic.

Fluid Extract Grindelia Squarrosa.—Offered to the profession, for the first time, by Parke, Davis & Co.—entirely new in this form.
Highly recommended as a remedy and preventative of malarial diseases, and as a reliable remedy in enlarged spleen. Used in conjunction with aconite and yerba santa to cure irritable coughs. As a substitute for hyoscimus and valerian in nervous excitement, it is of great value. Having a peculiar action on the optic nerve, it may prove efficacious in many affections of the eye.

Fluid Extract Achillea Millefollum.
This drug has been employed with great advantage in the treatment of intermittent fevers in this vicinity. M. Richards, of Soissons, also highly recommends it in low forms of exanthematous fever with difficult eruption. Useful also in colic, painful menstruation and infantile convulsions.

Fluid Extract Sabbatia Angularis.
Used both as a prophylactic and remedy for autumnal remittent and intermittent fevers. Has been found a valuable substitute for cinchona bark in cases where the latter has failed. Useful also in convalescence from fever and as a bitter tonic in dyspepsia.

Calisaya Alkaloids Combined, Sugar-coated Pills.
Quinia Sulph., ¼ gr. Quinidia Sulph., ¼ gr.
Cinchonia Sulph., ¼ gr. Cinchonidia Sulph., ¼ gr.

Chinoidine Pills, Sugar-coated.
Two sizes, 1 and 2 grains each.

Chinoidine Compound Pills, Sugar-coated.
Chinoidine, 2 grains.
Sulph. Iron Ex., 1 gr.
Piperine, ¼ gr.

Cinchonia Sulphate Pills, Sugar-coated.
Two sizes, 1¼ and 3 grains.

Cinchonidia Sulphate Pills, Sugar-coated.
Three sizes, 1, 2 and 3 grains each.

Picrate (Carbazotate) of Ammonium Pills. (Sugar-cured.)
Four sizes of the above pills are manufactured by us—¼ gr., ½ gr., ¾ gr. and 1 gr.

CARBAZOTATE OF AMMONIA AS A SUBSTITUTE FOR SULPHATE OF QUINIA.—In a recent communication to the Societe Therapeutique de Paris, Dr. Dajardin-Beaumetz investigated the character, properties, and uses of Carbazotate of Ammonia (combination of Ammonia with Carbazotic, Picric, and Trinitrophenic Acid), especially as a therapeutic successor to Sulphate of Quinine. After relating the successful employment of this salt in intermittent fever by Braconnot, Calvert, Aspland, Bell, Chazerean des Thureaux, Manopa, etc., Dr. Beaumetz gave the results of six cases treated by himself, and of various experiments carried on upon animals and man. Like Quinine, Carbazote of Ammonia diminishes the strength of the pulse, and brings on heaviness, cephalalgia, and even delirium, and is eliminated by the kidneys.

Quinidia Sulphate Pills, Sugar-coated.
Three sizes, 1, 2 and 3 grains each.

A New Vaginal Speculum.

By C. Henri Leonard, M. D.

Leonard's Vaginal Speculum.

Price, $12.00.

The cut gives a view of the speculum when fully expanded. As now seen, the tips of the blades are 4½ inches apart; the inside measurement of the base of the blades being 2¾ inches. By the thumb screw attached to the lower blade it (the lower blade) may be fixed at *any* point upon the perineal rods. When the base-extension, by the means of the perineal rods, is not made use of, the opening is then the same size as in the ordinary bivalve specula. When thus closed, and the superior blade is not elevated, the speculum is in form ready for introduction. The upper blade is ¼ inch shorter than the lower one, thus allowing an expansion of the blades without the rubbing of the upper one over an inflamed cervix uteri. The blades measure, from the attachments of the perineal rods, respectively 4½ and 5 inches in length. The upper blade has a fenestra which admits the urethra thus relieving all pressure from this sensitive organ when the perineal extension is made use of. The lower blade also has a fenestra extending from its base to within an inch of its tip; this allows an *easy* probing of an anteflexed uterus bent to an acute angle, the probe being allowed to press down the posterior vaginal wall, through this opening, until it can easily enter and traverse the distorted cervical canal.

The blades are well rounded up, and so relieve an excessive stretching at the vagina at their sides, thus making the instrument of easy introduction and painless to the patient. *Indeed, every patient that I have used one upon (and I have used them in many cases, and in vaginæ of all sizes, parties married and unmarried) has, upon questioning her in regard to the matter, declared that it gave them the least discomfort of any she had had introduced.*

You may make any operation upon the uterus or the sides of the vagina with this instrument; and by its use you may dispense with an assistant. When the perineal extension is used it is essentially a *Sim's* Speculum, only a self-retaining one. It may be used with the patient on the back, or in the "Sim's position;" at the option of the operator.

Their introduction to the profession has been left in the hands of Messrs. Parke, Davis & Co., of Detroit, Mich., who will see that all orders are promptly and conscientiously filled. C. H. L.

Each instrument is made in the highest style of the art possible, and is finished in full, in heavy nickel-plate, and will be warranted perfect in its action.

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We ask the patronage of our medical and pharmaceutical friends. Requests for quotations will be promptly and cordially answered.

Our pills are put up for market in bottles containing 100 and 500.

THE POSTAL LAWS forbid the transmission of glass-ware or liquids by mail, but we will send pills in paper boxes, free of postage, to any address, on receipt of price.

(SEND FOR A PRICE LIST.)

Bromide of Iron, 1 gr.

In the above form the ferruginous taste of this salt is dispensed with and its stability ensured. A reliable and elegant mode of administering this remedy. Used in nervous affections and as an alterative.

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This drug is a nervous sedative, used largely in hysteria, nervous headache, infantile convulsions, etc. It has been found very efficacious in chronic cystitis, especially at the neck of the organ, and when the pain is not due to neuralgia or organic lesion, and the cystitis is of congestive origin associated with vascular lesion of the neck, the result of various causes. Dr. Taylor found it to be much superior to Bromide Potassium in the diseases incident to dentition, and cites cases of cholera infantum, long continued complicated entra colitis, vomiting, diarrhœa, "worms," etc., which yielded rapidly to its influence.

Phosphide Zinc and Nux Vomica, ¼ gr.

Phosphide Zinc 1-10 gr. Extract Nux Vomica ¼ gr.

Phosphide of Zinc has attracted considerable attention among physicians recently, as a convenient remedy for such cases as require the combined action of phosphorus and zinc. Excellent effects have resulted from its use in chloro-anemia, menorrhagia, and especially in hysterical affections. Physicians should bear in mind that a portion of the phosphorus contained in Phosphide Zinc is inactive in the human economy, and that the dose of the salt is about eight times that of phosphorus. Dose of this formula, 1 to 3 pills per day.

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Especial care has been used throughout the manufacture of this pill to ensure an article that will fully represent the properties of the Calabar Bean, and in those cases, where it is important that the typical effects of this drug should be speedily developed, this preparation may be relied on.

Sandal Wood Comp., 3 grs.

Oil Yellow Sandal Wood 1 gr. Ext. Balsam Copaiba 1 gr. Cubebs 1 gr.

Sandal Wood Oil is at the present time extensively used in gonorrhœa, and is regarded with considerable favor by a large number of physicians. To meet a growing demand for this remedy in pill form, this formula has been devised, and is presented with every confidence, each ingredient being of the utmost purity, and the coating being applied by our improved *cold process*, deterioration by heat is avoided and the substance of the pill preserved in a soft condition.

Phosphorus and its combinations.

Practitioners have long needed a palatable, convenient and unchangeable form of this valuable remedy. Its great tendency to oxidation, its disagreeable odor and its dangerous features, have acted as a bar to its general use. By careful study and experiments, we have overcome the first objection, and can fully recommend our pills as representing the medicinal properties of the drug in an elegant and permanent form.

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Phosphorus and Nux Vomica, 1-4 gr.—Phosphorus 1-50 gr. Extr. Nux Vomica 1-4 gr.

Phosphorus, Nux Vomica and Iron.—Phosphorus 1-100 gr. Ext. Nux Vomica 1-4 gr. Phosphate Iron 1-2 gr.

Phosphorus, Zinc and Strychnia, 1 gr.—Phosphorus 1-70 gr. Valer. Zinc 3-4 gr. Strychnia 1-30 gr.

Phosphorus, Strychnia and Iron, 1 1-2 gr.—Phosphorus 1-100 gr. Strychnia 1-60 gr. Carb. Iron 1 gr.

Phosphorus, Iron and Quinine, 2 1-4 gr.—Phosphorus 1-100 gr. Carbonate Iron 1 gr. Quinine Sulph. 1 gr.

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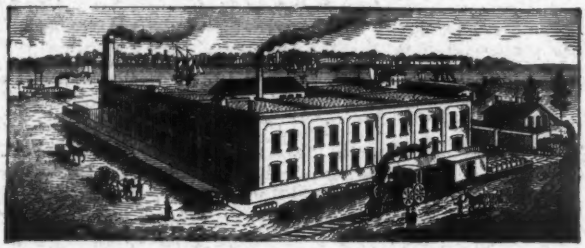

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